

HUMAN RIGHTS RISKS BEHIND TRAINS AND TRAMS IN SWEDISH PUBLIC TRANSPORT

A challenge requiring collaboration



- **Storstockholms Lokaltrafik (SL)** is responsible for the public transport in Region Stockholm. www.sl.se
- **Västtrafik** is responsible for the public transport in western Sweden and is owned by Region Västra Götaland. www.vasttrafik.se
- **Skånetrafiken** is an entity within Region Skåne in the south of Sweden. www.skanetrafiken.se
- **Luleå Lokaltrafik AB (LLT)** is responsible for, plans and carries out public transport in Luleå city and is owned by the Luleå municipality. www.llt.lulea.se
- **Globalworks Lund AB** is an independent not-for-profit enterprise based in Sweden. Globalworks' mission is to shed light on labour rights and human rights violations by collecting workers' online voices and grievances. HYPERLINK "<http://www.globalworks.se>"www.globalworks.se
- **Ethical Trading Initiative Sweden** is a multi-stakeholder initiative bringing together Swedish companies, trade unions, civil society, and public sector to strengthen workers' rights and human rights in global supply chains. ETI Sweden receives financial support from Sida. Sida is not responsible for the content of this report. www.etisweden.se



DISCLAIMER

While we have made every effort to assure a high degree of accuracy, rigor, and quality in the content of this report, neither ETI Sweden nor Globalworks can guarantee the correctness and authenticity of the documents that are used in this study. Any use of this report or the material and information linked to it shall be at your own risk and neither ETI Sweden nor Globalworks shall be held liable.

Authors: ETI Sweden (introduction),
Globalworks/Stefan Brehm and Helena Magnusson
(introduction and investigations)
Layout: Birgersson&Co/Åse Bengtsson Helin
Cover photo: iStockphoto
Publisher: Christopher Atapattu Riddselius
ISBN: 978-91-531-0066-9
March 2024

CONTENTS

Preface	4
Introduction	
Executive Summary	5
Recommendations	9
Context	12
The supply chain of trains and trams	18
INVESTIGATION IN THE CHINESE LOCOMOTIVE AND ROLLING STOCK SECTOR	
1. Human and Labour Rights Violations	20
1. Introduction	22
2. Method and data	22
3. Findings	29
4. Conclusions	56
2. Forced Labour	66
1. Forced labour in China	68
2. Forced labour due diligence	76
3. Method and data	78
4. Findings	79
5. Conclusions	92
References	94

Preface

The railway sector, along with the manufacturing of locomotive and rolling stock, play a crucial role in driving the green transition, as well as in achieving Sweden's climate goals for the transportation sector. As public transportation authorities, it is of utmost importance to make sure that this transition is carried out in a sustainable way, in all aspects. This is why we have identified a need for increased knowledge about sustainability risks and how to address these in complex supply chains.

We believe that collaboration is key to effectively address these issues. Through our membership in ETI Sweden and the working group we have formed, we have strengthened our capabilities to tackle these challenges. This report has been developed to raise awareness of risks related to human rights violations within our shared supply chains and to enable us to effectively address these risks. As public procurers, we have a common code of conduct for suppliers as part of our contracts to ensure responsible procurement of products and services that contribute to environmentally, socially, and economically sustainable societies. However, to simply set requirements is not enough; we need to also ensure compliance through adequate monitoring.

In the monitoring process, developing a clear risk assessment is crucial to drive the work forward with the right priorities. For this reason, the report constitutes a vital component of our ambition to gain an understanding of sustainability risks within our shared supply chains. We hope that the findings will contribute to a continued constructive dialogue and proactive efforts within the entire sector on how to address risks of labour and human rights violations in complex supply chains.

March 2024

Storstockholms Lokaltrafik
Västtrafik
Skånetrafiken
(in collaboration with Luleå Lokaltrafik)

Executive Summary

This report is one of the first public human rights due diligences in the Chinese supply chain of trains and trams. The investigation focuses on China, where many components are manufactured, and which constitute a high-risk country regarding forced labour. Findings of the report highlight salient human rights risks and uncover the mechanisms and practices behind them.

Rail-bound transport plays a crucial role in the green transition in Sweden. The increasing demand for public transport implies a growing need for investments in new and more efficient trains and trams. Procurement processes and manufacturing take many years and the supply chains and ownership structures within the global manufacturing of trains and trams are complex. China has emerged as a major manufacturing country and reports of human rights risks and violations in the Chinese supply-chains have escalated in recent years. This was recently highlighted by ETI Sweden in a report on human rights risks in the manufacturing of electric buses and batteries in China.¹

This report covers over 50 manufacturers and suppliers within train and tram manufacturing in China. The purpose is to raise awareness regarding human rights risks in train and tram supply chains and to strengthen sustainable procurement of public transportation in Sweden.

The investigation is divided into two parts, each based on different research methods. The first part focuses on social media posts from employees and student interns in the manufacturing of locomotive and rolling stock for trains and trams. It identifies and documents labour and human rights risks and violations. The second part of the report uses company registries, government websites, and news outlets to map specifically state-imposed forced labour risks.

The investigation reveals worsening working conditions in Chinese supply chains since the Covid-19 outbreak in the autumn of 2019. The ongoing economic downturn in China is expected to further increase human rights risks. The report also identifies multiple links between locomotive and rolling stock supply chains and state-imposed forced labour, showing the need for foreign brands and suppliers to carry out heightened human rights due diligence.

Furthermore, it is a significant challenge to map, monitor, and address human rights risks in China. State repression has intensified; for instance, through stricter legislation that hampers the collection of information regarding human and labour rights violations, thereby limiting the possibilities for conducting reliable social audits.

The report is published by ETI Sweden and commissioned by four Swedish public transport authorities (Storstockholms Lokaltrafik, Västtrafik, Skånetrafiken, and Luleå Lokaltrafik). All of them are members of ETI Sweden's working group on electric vehicles. Globalworks Lund AB has collected the data, conducted the research, and authored the report.

Findings regarding working conditions

Child labour risks through student interns

Student internship programmes are frequently used to recruit workers in the locomotive and rolling stock industries. Some internships satisfy ILO criteria for forced labour, such as “abuse of vulnerability” and “deception”. In the case of students under the age of 18, exploitative internships constitute child labour. Students report receiving inaccurate or little information concerning their internship contract. There is no accountability for schools or recruiters to provide accurate information. Contracts are vaguely formulated and as a result they cannot fully protect students’ rights and interests. If students want to cancel a contract, they must pay a penalty of RMB 5000 (about € 640). According to students, internships lack educational content and require them to perform factory work unrelated to their courses.

Forced labour (state tolerated)

Many workers are prevented from resigning merely by employers inflicting an array of obstacles violating the Chinese labour legislation. Often workers are not informed how to resign correctly. Resignations require the signature of direct superiors. When the latter do not approve, workers are effectively prevented from leaving or are forced to leave informally. Employees may also have to repay resettlement allowances or training fees if they resign within three to five years of employment.

Discrimination

Job advertisements for employees in the locomotive and rolling stock sector are frequently based on discriminatory selection criteria. Almost all reviewed advertisements impose age limits, which is permitted under Chinese labour law but does not align with most codes of conduct that Chinese suppliers agree to. Appearance related criteria such as “no weird hairstyle” or “no visible tattoos” are another common discriminatory recruitment approach. Some jobs are open only for men or only for women and some advertisements rule out candidates from ethnic groups such as Uyghurs, Hui, and Zhuang. There are also instances where candidates have been selected based on their willingness to submit to rest days or overtime pay that are not in accordance with legal regulations.

Freedom of association

Workers in China do not have the right to organise independently. Instead, they must rely on the All-China Federation of Trade Unions (ACFTU), a mass organisation under the Chinese Communist Party. The ACFTU, however, rarely advocates workers’ rights and interests. The main tasks of the ACFTU are ideological education, organisation of social events (such as birthday celebrations) and charity work. Despite severe political repression, workers occasionally dare to protest. But during the past decade under Xi Jinping, the average number of workers participating in protests has declined and grievances mainly touch upon legal rights and rarely refer to workers’ interests beyond the legal minimum.

Compensation

Regular fulltime wages for workers at low seniority or low-skilled levels are 50-70% below the living wage benchmarks. As a result, this employee group is highly dependent on performance pay and overtime hours to earn their living. Workers with high-skilled or seniority level jobs receive position wages that are above living wage benchmarks. Yet, workers express that skill and seniority pay can vary monthly and can become halved with short notice. Due to the current fierce market competition within the locomotive and rolling stock sector, workers at

all levels are exposed to ad hoc cost saving measures. Popular cost saving measures are cancelled overtime pay or delayed wage payment, both which violates the workers' legal rights. Other wage cuts, such as reduced performance pay, are legally permitted but may result in total wages that are below a living wage. Performance pay as such facilitates wage manipulation and should be considered a risk factor.

Contracts and human resources

Receiving a regular employment contract in state-owned locomotive and rolling stock companies in China may come with fees ranging between RMB 10000 – 60000 (€ 1300 – 7700). This violates ILO principles prohibiting all kinds of fees incurred in the recruitment process in order for workers to secure employment. Besides regular employees, an increasing number of workers is hired through outsourcing and dispatched labour agents. According to our findings, and in violation of the Chinese legislation, these worker groups do not receive equal pay for equal work, and working conditions are worse.

Occupational safety and health

Workers write little about health and safety in social media. The most frequent complaint is work-related stress. Employees are under constant pressure to be faster and accomplish more. In addition, wage cuts in recent years have increased financial stress, forcing them to work long hours and compete for project-based employment contracts. Heavy, prolonged work pressure increases mental health risks as well as the risk for work related accidents.

Working time

Employees working in production-related positions are regularly forced to work excessive hours. Workers state that a 13–14 hours workday is normal. But there are also reports of 320–360 overtime hours per month. Such extremes are 10 times the legal maximum. Workers report that overtime pay is limited to a maximum of 32 hours even though they must work excessive extra hours. The number of paid overtime hours is reduced further as companies seek to save costs.

Findings regarding state-imposed forced labour

The Chinese Government and the Communist Party under President Xi Jinping have developed and scaled up Targeted Poverty Alleviation (TPA) programs in western and central China as a major approach to tackle absolute poverty. TPA involves precise identification, tailored assistance, and effective management of poor households, and regularly deploys state-organised employment. Farmers and herdsmen may be transferred to work in other provinces or relocated to poverty alleviation workshops in towns within their home regions. Industrial poverty alleviation also relies on vocational training and collaborations between schools and companies.

Labour transfers, poverty alleviation workshops, and vocational training fall under industrial poverty alleviation policies and are intimately linked to risks of state-imposed forced labour. Local cadres meet mandatory poverty alleviation quotas with coercive measures, such as revoking farmers land use rights, household registration or basic financial support. This leaves them with no way out but to submit to the wage labour that is offered to them. Industrial poverty alleviation may lead to unwanted employment and exploitative labour relations due to participants' economic and political marginalisation. In Xinjiang and Tibet, industrial poverty alleviation is bundled in the general fight against terrorism and religious extremism package. Refusal to be relocated or to accept assigned factory work are interpreted as signs of extremism and often leads to detention or internment.

Findings in this report show that the locomotive and rolling stock industry in China is strongly linked to state-imposed forced labour. One of the reasons is the significant role of the CRRC as a key actor in the global supply chain and as an important gate for foreign companies into the Chinese market.

Connections to the state-imposed forced labour regime in Xinjiang

There are several channels through which Uyghur forced labour may enter the locomotive and rolling stock sector:

- CRRC operates an industrial zone for train production in Xinjiang. The company has ties to the Xinjiang Production and Construction Corps (XPCC), a para-military enterprise.
- Voith, Bombardier, and Knorr-Bremse run joint ventures with CRRC.
- Victall has a strategic partnership with CRRC.
- KTK Group has acquired Uyghur workers through state-organised labour transfers.
- Voith maintains a longstanding relationship with the Government of Xinjiang Uyghur Autonomous Region and with mining corporations in Xinjiang.
- Knorr-Bremse has a joint venture agreement with Dongfeng Motors. Dongfeng Motors has established poverty alleviation workshops in Xinjiang, purchased from them, and sent Uyghur workers to these workshops.
- Grammer has a joint venture with Shaanxi Automobile. Shaanxi Automobile runs a factory in Xinjiang and participates in state-organised labour transfers.
- Secheron and Siemens both have joint ventures with Daqo. The latter's parent company is Xinjiang Daqo New Energy, which is banned from the US market due to its involvement in Uyghur forced labour.

Connections to state-imposed forced labour in other risk areas

Several corporations are involved in industrial poverty alleviation programs targeting non-Han ethnic groups in western China:

- CRRC, a joint-venture partner of Voith, Bombardier, and Knorr-Bremse, runs various industrial poverty alleviation programs in Gansu Province and Guangxi Zhuang Autonomous Region. CRRC has also established poverty alleviation workshops in Hunan Province and Gansu Province and has received workers through labour transfers.
- Local governments in Gansu Province transferred poor workers to Victall. Furthermore, the company benefitted from student interns from poor households through a collaboration agreement with a vocational school in Shandong.
- Dellner is linked to forced labour through its joint venture partner Victall.
- Grammer has actively participated in and supported CRRC's industrial poverty alleviation program in Gansu Province. This program includes labour transfers and worker relocation to poverty alleviation workshops.
- KTK Group has participated in labour transfers of poor workers from Shaanxi. In addition, the company has received student interns from poor families.

None of the investigated corporations mentioned forced labour risks in China or links to Xinjiang in their respective sustainability / ESG reports. The gap between our findings and corporate reporting highlights the urgent need for stricter requirements on transparency and accountability.

Recommendations

The following recommendations are based on international standards, mainly the UN Guiding Principles on Business and Human Rights (UNGPs) and the OECD Guidelines for Multinational Enterprises (OECD Guidelines), as well as responsibilities under relevant legal frameworks.

The recommendations are divided into two parts. Firstly, directed to the public buyers on how to address the findings in this report through public procurement, and secondly directed to the locomotive and rolling stock companies supplying the public buyers and their responsibilities under international frameworks.

ETI Sweden's Recommendations to Public Transport Authorities

- Unless already adopted, implement clear requirements in public procurements of locomotives and rolling stock, aligned with internationally recognized human rights – understood, at a minimum, as those expressed in the International Bill of Human Rights and the principles concerning fundamental rights set out in the International Labour Organization's Declaration on Fundamental Principles and Rights at Work.
- Exploit the full range of tools presented in the EU Directives on Public Procurement and the Swedish Public Procurement Law regarding setting social criteria in public contracts.

To address the findings regarding forced labour, this could include:

- Require suppliers to provide full traceability of their supply chains, including where components etc., are manufactured, clearly identifying entities and locations of manufacturing operations for each step of the supply chain.
- Use contract performance clauses to require all suppliers bidding for the public contract to ensure that no forced labour was used in the manufacturing of the goods and demonstrate how such risks are addressed through due diligence measures aligned with the UNGPs and OECD Guidelines. In evaluating alignment with the contract performance clauses, consider all suppliers, or sub-suppliers, meeting any of the following criteria as not qualifying for the tender: 1) operating in the primary or secondary sector located in Xinjiang, Tibet and Tibetan autonomous prefectures in Sichuan and Qinghai, 2) participating in state-organized labour transfer/poverty alleviation programs, 3) receiving vocational students from registered poor households through poverty alleviation programs.
- Exclude suppliers deemed to be in violation of social and labor related standards from tenders. This could be based on publicly available information and research from credible independent sources.

To address the findings regarding poor working conditions, this could include:

- Consider the full life cycle of products in purchasing decisions, not only the immediate price, such as labor costs in the supply chain. This could include addressing the identified issues related to working conditions, by factoring in costs for increased wages, better accommodation standards, etc.

- In addition to setting minimum requirements through contract performance clauses to respect labour rights, use award criteria to incentivize suppliers who can demonstrate leading and innovative practices in addressing the identified risks related to poor working conditions.
- Ensure that adequate resources are allocated internally for continued due diligence measures, including once contracts have been awarded, to follow up on requirements set in the tender process, track performance of suppliers and respond to potentially new developments and/or information.
- Seek collaboration with other public contracting authorities, also outside of Sweden, to build leverage and common approaches to setting social criteria in public procurements of locomotive and rolling stock.
- In cases where this has not already been done, include clear requirements in public procurement of locomotives and rolling stock, which are in line with internationally recognized human rights based on the Universal Declaration of Human Rights by the United Nations, as well as the principles in the International Labour Organization (ILO)'s Declaration on Fundamental Principles and Rights at Work.
- Utilize the full range of tools in the EU's Directive on Public Procurement and the Swedish Public Procurement Act (LOU) when establishing social criteria in public contracts.

ETI Sweden's Recommendations to companies in the locomotive and rolling stock sector, sourcing from China:

- Establish robust human rights due diligence measures, aligned with international standards (UNGPs and OECD Guidelines), addressing risks in own operations and across the full value chain. This includes:
 - Implement policy commitments, clarifying the company's responsibility to respect human rights in their own operations and across the value chain, including requirements of business partners, and establish clear internal governance structures for managing human rights risks.
 - Regularly and continuously assess and identify actual and potential adverse human rights impacts of company activities and associated business relationships, including suppliers and joint venture partners.
 - Integrate findings from human rights assessments across relevant internal functions and processes and take appropriate action to prevent and mitigate the risks.
 - Track performance to verify whether adverse human rights impacts are being effectively addressed.
 - Communicate publicly, where appropriate, on company responses to actual and potential human rights impacts.
 - Commit to providing and enabling remedy for adverse human rights impacts that have occurred.

In relation to the report's findings regarding forced labour:

- Due to the severity and irremediability of the impacts and the inability to enact change, as soon as possible disengage from, and implement a company policy not to source from, or enter into joint ventures with, entities that meet any of the following criteria:

1. operating in the primary or secondary sector located in Xinjiang, Tibet and Tibetan autonomous prefectures in Sichuan and Qinghai,
2. participating in state-organized labour transfer/poverty alleviation programs from the same regions,
3. owned or controlled by the Xinjiang Production and Construction Corps (XPCC), a state-owned enterprise and paramilitary organization.
4. sourcing from companies tainted with forced labour based on credible research.

- Engage with locomotive and rolling stock companies in the value chain to address wider identified risks related to forced labour, in order to gradually de-risk Chinese supply chains, prioritizing disengagement (in accordance with the OECD Due Diligence Guidance for Responsible Business Conduct) from entities in the supply chain, or joint venture partners, meeting any of the following criteria:

1. participating in state-organized labour transfer/poverty alleviation programs from regions in China other than the ones mentioned above,
2. receiving vocational students from registered poor households through poverty alleviation programs.

- Any actions to disengage from business relationships (as covered by the two previous recommendations) should be done in accordance with the OECD Due Diligence Guidance for Responsible Business Conduct³. Meaning that disengagement shall be considered after failed attempts at preventing or mitigating severe impacts, when adverse impacts are irreparable, where there is no reasonable prospect to change or when severe impacts or risks are identified and the entity causing the impacts does not take immediate action to prevent or mitigate them. A decision to disengage needs to consider the human rights impacts because of the disengagement itself, and responsibilities to provide or enable remedy for affected stakeholders.

- To address risks further upstream in the supply chain, implement global traceability programs to map the full supply chain of high-risk components and high-risk business relationships.

In relation to the report's findings regarding working conditions:

- Actively engage with business partners and other stakeholders to address the full scope of identified risks related to working conditions, using, and building leverage across the value chain and prioritizing risks based on the severity of the impacts.
- Where impacts have already occurred, and been identified, engage with business partners and affected stakeholders to enable remedy for the harm.
- Work with suppliers to establish worker voice programs aimed at continuously gathering feedback from, and engaging with, workers in the supply chain, and other potentially affected stakeholders, to improve working conditions.
- Require suppliers to allow for alternative forms of worker representation. While independent trade unions are prohibited by law in China, employees are generally allowed to freely elect local worker representatives.
- Implement living wage requirements and collaborate across the supply chain to jointly establish living wage standards and reflect this commitment in the company's purchasing practices.

Context

To address the climate crisis, comprehensive societal transformations are required. Swedish public procurement has an annual turnover of approximately 800 billion SEK, which is equivalent to nearly one-fifth of Sweden's GDP.⁴ Through procurement, the public sector plays a crucial role in the transition to a fossil-free and sustainable society.

According to the Swedish Environmental Protection Agency, emissions from domestic transport (excluding domestic flights) should decrease by at least 70 percent by 2030 compared to 2010.⁵ Sweden aims to achieve net-zero emissions by 2045, in line with the climate law, and regions and municipalities have extensive climate goals in place aligned with this.

To meet these climate goals, regional public transport service, including railway and trams, has a vital role to play. Every journey made through public transport instead of cars reduces greenhouse gas emissions significantly; a car trip emits as much carbon dioxide as 81 train journeys when covering the same distance.⁶

One of the commitments of the regions is to provide public transport for their residents. The responsibility within each region lies with a regional authority known as public transport authorities and is carried out through public procurement. Sweden's regions procure public transportation services for a total of approximately 52 billion SEK each year. Public transport is roughly half funded by ticket revenues and half by regional and municipal taxes.⁷ The three largest public transport authorities in Sweden are Storstockholms Lokaltrafik (SL), Västtrafik, and Skånetrafiken.

The supply chains and ownership structures within the global manufacturing of locomotives and rolling stock are complex. Subcontractors may operate within the same corporate structure as the main supplier or within a separate company. Business collaborations and partnerships between different companies, known as joint ventures, are also common. The Chinese supply chains involve the manufacturing of locomotives and rolling stock, including components such as train carriages, brakes, coupling equipment, AC, motors, interiors, and batteries, as well as the extraction of minerals and coal for energy.

China is one of the leading producing countries, particularly regarding high-speed trains. The country is carrying out a major investment in high-speed trains with the goal of building 7,000 miles of track by 2035. Initially, cooperation was established with foreign companies such as Alstom, Bombardier (now Alstom-Bombardier), and Mitsubishi. Today, China manufactures trains on their own, for both domestic use and export.⁸ The country's three major state-owned enterprises, China Railway Rolling Stock Corporation (CRRC), China Railway Construction Corporation (CRCC), and China Railway Engineering Corporation (CREC), specialize in locomotives and rolling stock, construction, and engineering. They are involved in several major projects worldwide, and CRRC is currently a world leader in train manufacturing.

China also dominates the supply chain of raw materials for batteries such as lithium, graphite, and cobalt.⁹ Batteries are a crucial component in electric trains for energy storage and stability. Batteries are expected to play a key role in improving train performance and reducing environmental impact as railways worldwide are shifting towards electrification.¹⁰ Fully battery-powered trains are also being explored as a possibility, for example in Germany¹¹, and could potentially constitute a future alternative for the non-electrified railway in Sweden as well.

1. Human Rights in China – And the EU’s Response

The Chinese constitution guarantees freedom of speech and expression. However, freedom of expression, freedom of the press, and freedom of information are severely restricted in practice. Individuals reporting on politically sensitive issues face significant risks of harassment, threats, or arrest. Both traditional and social media are monitored and regulated, and censorship, both direct and indirect, is widespread. The space for civil society to operate is very limited and continues to shrink. Several civil society actors have been accused of offenses against national security.¹²

Serious and systematic violations of the human rights of individuals belonging to religious and ethnic minorities occur, especially in Xinjiang and Tibet. Linguistic, cultural, and political assimilation of minorities has become an increasingly important political goal, and the methods to achieve this goal have become harsher. A very large number of Uyghurs and individuals from other minorities are arbitrarily detained in internment camps.¹³

In August 2022, the United Nations published a report confirming that the Chinese state subjects Uyghurs and minorities in Xinjiang to forced labour and other serious human rights abuses.¹⁴ Forced labour is part of the Chinese state’s poverty alleviation program and targets specific groups, particularly registered poor households, and vulnerable ethnic groups such as Uyghurs.

Forced labour also occurs in other parts of China through relocation of labour. A report from The Australian Strategic Policy Institute has previously identified 82 foreign and Chinese companies that potentially benefit, directly or indirectly, from the use of Uyghur workers outside of Xinjiang through abusive labour relocation, including several train or train component manufacturers such as Alstom-Bombardier, CRRC, KTK Group, Siemens, and Hitachi.¹⁵

1.1 Chinese Laws Protect National Interests

Several laws have been enacted that enable actions against individuals, organizations, and states considered to harm China’s interests, including an anti-sanctions law¹⁶ and a national security law with an extraterritorial component¹⁷. The recently promulgated Chinese Counter-Espionage Law¹⁸ potentially renders all investigations and information collection a criminal offense.

1.2 Western Laws Take Stronger Measures Against Forced Labour

At the same time, legislation in the European Union and the United States are stepping up requirements for human rights due diligence. The EU Proposal for a ban on goods made using forced labour¹⁹ and the Directive on corporate sustainability due diligence²⁰ urge corporations to do more and be more effective in preventing forced labour risks. In the US, the Uyghur Forced Labor Prevention Act (UFLPA)²¹ establishes a rebuttable presumption that all goods originating entirely or partly from Xinjiang are banned from entering the US market. The 2023 updated OECD Guidelines for Multinational Enterprises on Responsible Business Conduct²² call on enterprises to contribute to “the elimination of all forms of forced or compulsory labour and take immediate and effective measures towards the elimination of forced or compulsory labour as a matter of urgency”.

1.3 The EU is Taking Measures to Stop the Dependency on China

Raw materials such as silicon and lithium for batteries and solar cells are required to meet the green transition with electrification and renewable energy. In September 2023, the European Parliament approved a proposal to secure the supply of these raw materials and reduce dependence on China. According to the proposal, an individual country can account for a maximum of 65 percent of the deliveries of a specific raw material.²³

2. Swedish Regional Procurement Procedures

Extensive investments in rail-bound public transport are underway in the Swedish regions. The Stockholm region is now facing the largest development and expansion in public transport since the 1960s, with planned investments of a total of around 80 billion SEK, extending into the next decade, including the construction of 46 new railway stations in the region.²⁴ This development implies extensive procurements of locomotives, rolling stock and associated components. Västlänken, a train tunnel for regional commuter train service, is currently under construction in Gothenburg, paving the way for a significant expansion of train service in western Sweden. Västtrafik has ordered 45 new trains to gradually increase the transport service. Expansion is also taking place in the tram service of Gothenburg, in the form of new tracks and longer platforms, with an ongoing delivery of a total of 100 new trams.

Locomotives and rolling stock have a lifespan of about 40 years, significantly longer than for example buses, and is a major investment. The procurement process of rolling stock is also more extensive, with approximately ten years from the initial procurement phase to delivery. This means that the sustainability requirements within a public procurement of rolling stock in general are around ten years old by the time the rolling stock is being delivered, since amendments to the procurement requirements cannot be made during an ongoing procurement process.

The locomotives and rolling stock are owned by SL, Västtrafik and Skånetrafiken, and the manufacturing is procured either directly from various suppliers or through framework agreements with Transitio, a procurement and management company for rolling stock, wholly owned by the Swedish regions. Transitio is also leasing trains to the regions.²⁵ The Skåne region and Västtrafik jointly own Öresundståg AB along with several other regions. Skånetrafiken currently has a mandate to procure the next generation of Öresundståg. In this process, different ownership structures are being explored, as well as the possibility of leasing trains as an alternative to ownership. Luleå Lokaltrafik does not have any rail-bound traffic service.

2.1 Social Criteria in Public Procurement

In 2014, the EU adopted new Directives on Public Procurement. Which were transposed into national law in all Member States in 2016. One of the main focuses of the new directives is on social and environmental criteria, providing public buyers with increased and clearer tools to set such criteria in public tenders. The directives are transposed into Swedish law through Lagen om Offentlig Upphandling (LOU).

Several articles in the directives address how social criteria should and can be introduced. Under Principles of Procurement, Article 18.2²⁶, it is stated that: “Member States shall take appropriate measures to ensure that in the performance of public contracts economic operators comply with applicable obligations in the fields of environmental, social and labour law

established by Union law, national law, collective agreements or by the international environmental, social and labour law provisions listed in Annex X.”

Annex X includes all eight ILO core conventions, which cover freedom of association and collective bargaining, forced labour, child labour, and discrimination.

The directives furthermore provide a set of tools to incorporate social criteria in different stages of a procurement process. For example, Article 68 encourages public authorities to consider the full life cycle of products in purchasing decisions, not only the immediate price.

Contracting authorities may consider criteria related to the production of the works, services, or supplies to be purchased, hence incorporating costs of improving labour standards in manufacturing countries in tender evaluations. This could include addressing the identified issues related to working conditions covered in this report.

A purchasing authority can also combine mandatory requirements in the form of contract performance clauses with optional requirements in the form of award criteria. This would allow public buyers to, on the one hand, set clear minimum standards for qualification through contract performance clauses, for example, a zero-tolerance for forced labour, and on the other hand support suppliers that demonstrate advanced practices at the time of bidding.

Award criteria could focus on best practice approaches, for example, whether a supplier demonstrates active involvement in worker voice tools further upstream in the supply chain, or how a supplier ensures a living wage is paid to factory workers. Such criteria could allow a higher immediate cost price, creating a competitive advantage for suppliers who can demonstrate positive impacts. Any supplier awarded the contract will nevertheless need to adhere to fundamental labour rights protections, as detailed in contract performance clauses.

Award criteria might be more suitable in addressing some of the risks related to poor working conditions, while mandatory contract performance clauses are a better option for establishing a zero-tolerance for forced labour. In addition to using contract performance clauses and award criteria, public buyers also have the option to exclude suppliers deemed to violate social and labour standards.²⁷

2.2 Sustainable Public Procurement – a National Collaboration

The railway industry is considered a high-risk sector when it comes to human rights and fundamental labour rights. For this reason, the three largest public transport authorities, as well as procurers of trains, in Sweden – Storstockholms Lokaltrafik (SL), Västtrafik and Skånetrafiken – jointly collaborate on setting requirements which demand that locomotives, rolling stock and associated components are manufactured in both a socially and environmentally sustainable manner.

Since 2010, Sweden’s regions have been working together within the National Secretariat for Sustainable Public Procurement²⁸ and are committed to a common supplier code of conduct. The code covers areas such as human rights, workers’ rights according to ILO’s core conventions, environmental issues, and business ethics. The code of conduct and the requirements has been used in public procurements of locomotives and rolling stock along with associated components, over the years, but has not been used in older procurements as procurement procedures are relatively infrequent due to the lifespan of the vehicles.

An excerpt from the common contractual terms for sustainable supply chains, aligned with the code of conduct²⁹ that has been in effect until 2023, stipulate that the supplier shall:

1. Respect the code of conduct in its own operations and adopt a publicly available policy, decided by top management, including a commitment to respect the code of conduct.
2. Appoint a person at senior-level who is responsible for compliance with the code of conduct.
3. Transmit the commitment to respect the code of conduct to subcontractors at all levels.
4. Regularly conduct risk assessments, i.e., identify and prioritize current and potential risks of non-compliance with the code of conduct, including mapping subcontractors at all levels with special consideration for high-risk activities.
5. Regularly monitor compliance with the code of conduct in both its own operations and with subcontractors at all levels.
6. Take measures to prevent, mitigate, and limit non-compliance with the code of conduct, and promptly address adverse impacts, at the public transport operator and with subcontractors.³⁰

From 2024, the common code of conduct and the contractual terms for sustainable supply chains have both been updated and can be used in future procurements. The code of conduct has been strengthened in the areas of human rights and the environment.³¹ The specific contractual term for sustainable supply chains has been clarified in accordance with the UN Guiding Principles on Business and Human Rights, the OECD guidelines on due diligence for responsible business conduct, as well as upcoming EU directives. New features in the term include, for example, consultations with rights holders, consideration of particularly vulnerable groups, enabling of complaints, compensation for actual adverse impact which the supplier has caused or contributed to, reporting obligations in case of serious deviations, and transparency requirements in the supply chain.³²

Furthermore, The Swedish Public Transport Association has a common appendix of requirements for the locomotive and rolling stock sector from 2013. It requires, among other things, active efforts regarding environmental issues and environmental management systems.

2.3 Follow-Up Assessment is Challenging

According to the regions' common code of conduct and social requirements, public transport operators should be able to demonstrate that their supply chains meet the requirements of the code of conduct. The public transport authority has the right to independently or through a third party assess the public transport operator's compliance with the code of conduct.

At the same time, it is very difficult to conduct effective human rights due diligence, which involves mapping and managing human rights risks, in China. Repression in the country has increased in recent years, and it is difficult to obtain information documenting human rights violations and labour rights abuses. To testify about human rights issues is simply too dangerous, particularly for the most vulnerable, such as workers and minority groups.

Companies and organizations that monitor working conditions remain under severe pressure. In 2021, the audit firm Verité's China office was shut down after participating in reports exposing forced labour.³³ In 2023, several other international consulting firms were raided, among them Mintz Group, whose office was closed and five of its locally employed staff arrested.³⁴ The raids coincide with a broadening of China's laws anti-espionage laws. Japanese

consulting firms have considered leaving China after at least 17 Japanese citizens have been detained since 2014.³⁵

Additionally, an entire consulting industry has developed in China whose purpose is to prepare factories for social audits, to improve their chances of “passing” them, despite the suppliers’ inability to meet the requirements of decent working conditions. This may include manipulating documents, instructing workers, and preparing various forms of false documentation to hinder violations of working hours and wages from being detected.³⁶

Human Rights Due Diligence

Human rights due diligence (HRDD) is a risk management process to identify, prevent, mitigate, and account for a company’s actual and potential adverse impacts on human rights. The *OECD Due Diligence Guidance for Responsible Business Conduct* recommends that businesses carry out risk-based due diligence to avoid and address adverse impacts associated with their operations, their supply chains and other business relationships.

3. Method

The investigations were conducted in 2023 by Lund-based Globalworks, which developed Social@risk™, a framework for text-based big data analysis. Globalworks scraped Chinese social media for 240 000 posts from employees that can be linked to factories in the traffic authorities’ supply chains. Workers’ complaints, grievances, and photos were then analysed qualitatively and quantitatively. Globalworks has also collected and analysed information from Chinese Government and Party documents that link the same supply chains to state-imposed forced labour.

The overview of publicly available information that Globalworks has found substantiates a significant risk of state-sanctioned forced labour associated with the suppliers. The two investigations constitute separate chapters in the full report, where it is also possible to read more in-depth about the methods.

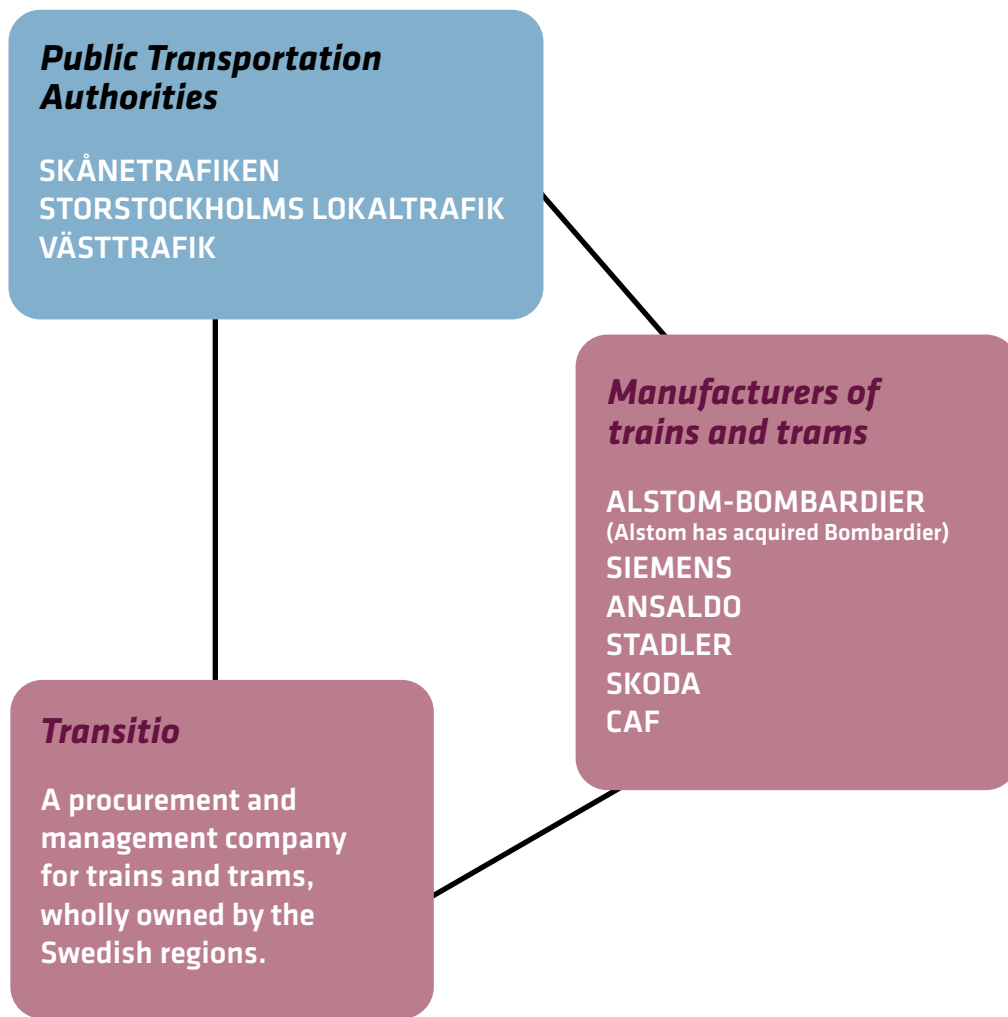
Conclusion

This report underscores the significant sustainability risks inherent in the necessary shift towards fossil-free alternatives in public procurement. The use of Chinese-manufactured locomotives and rolling stock in Swedish public transportation are linked to serious risks of state-imposed forced labour and human rights violations.

Mapping, monitoring, and addressing human rights risks in China brings about major challenges. In addition, new repressive Chinese laws are making it increasingly hard to collect information regarding human and labour rights, in turn limiting the possibility to conduct reliable social audits.

The central issue that needs to be addressed is how the green transition towards increased public transportation can be carried out without causing adverse impacts on the environment and the people in the supply chains.

The supply chain of trains and trams



The figure is not complete, it only shows examples of suppliers in the supply chain. The Public Transportation Authorities Skånetrafiken, Storstockholms Lokaltrafik, and Västtrafik own the trains and trams and have contractual agreements with the manufacturers either directly or through the procurement company Transitio. Luleå Lokaltrafik does not own any trains nor trams and is therefore not included in the figure.

Suppliers

INTERIOR KTK

GANGWAY Hübner, Dellner, KTK, Victall-Dellner

AUTO-MATIC COUPLERS AND SHORT COUPLERS Dellner, Voith Turbo Scharfenberg, Faiveley

BRAKE SYSTEM AND COMPRESSED AIR Knorr-Bremse (bromssystem), Wabtec-Faiveley, Atlas Copco (tryckluft)

SANI-TARY AND WATER SYSTEMS (UWC) Victall - EVAC (komplett), Victall (komplett), Wuxi Wanli (Leverantör av avfallshämtning, EVAC:s partner i Kina), Wuxi Jinxin (Leverantör av toaletthytt), Tsingdao Kampion (Leverantör av toaletthytt), Qingdao Yicheng (Leverantör av avfallshämtning, EVAC JV företag i Kina), BFG, EVAC, SEMVAC

DRIVER SEATS Grammer, Möve, SAVAS

PASSENGER SEATS Franz Kiel, Fabricación Asientos Vehículos Industriales, Grammer

VIDEO SURVEIL-LANCE/CCTV Strabag, Axis

TRAIN RADIO SYSTEM Strabag, Funkwerk

PASSENGER INFORMATION SYSTEM (PIS) Annax

WIFI Icomera

EXTERNAL DOOR SYSTEMS IFE-Victall , Shanghai Faiveley , Nanjing Kangni

ELECTRICAL CABINETS Nanjing Kangni, Victall

HVAC (HEATING, VENTILATION, AND AIR CON-DITIONING) SYSTEM Shijiazhuang King, Merak-Jinxin, Shanghai Faiveley

ELECTRICAL CABINETS Bombardier Sifang Transportation and Lanp Electrical (den enda leverantören av elskåp, BST ansvarar för inbyggnaden)

DRIVER'S DESK Bombardier Sifang Transportation and Victall (GRP), Tsingdao Kampion

BOGIE FRAME Bombardier Transportation Matranovak (BTM)

WHEELSETS FOR BOGIE Lucchini, Bonatrans, GHH, CAF

TRANSFORMER ABB, Siemens , JST, BNP

TRACTION MOTOR Bombardier Transportation Equipment (Suzhou) Co., Ltd (BTES), SKODA, ABB

GEARBOX IGW, Siemens, Voith Turbo

PARTITIONS AND ENDWALLS Victall, Changzhou Evergreen

SIDE WALLS Victall , Changzhou Evergreen

TRAIN FLOOR Metawell

CEILING Victall, Changzhou Evergreen

CURRENT COLLECTOR Schunk, Stemmann

BATTERY Hoppecke

MAIN SWITCH Richard, Secheron

HUMAN AND LABOUR RIGHTS VIOLATIONS IN THE CHINESE LOCOMOTIVE AND ROLLING STOCK SECTOR

**A HUMAN RIGHTS DUE DILIGENCE ANALYSIS BASED
ON ONLINE DOCUMENTS AND SOCIAL MEDIA POSTS**

AUTHORS

**Stefan Brehm and Helena Magnusson,
Globalworks Lund AB**

FAST FIND

1. Introduction	/ 22
2. Method and data	/ 22
2.1 Data	/ 23
2.2 Identification of topics	/ 24
2.3 Qualitative analysis	/ 26
2.4 Quantitative analysis	/ 27
2.5 Risk assessment	/ 27
3. Findings	/ 29
3.1 Child Labour	/ 30
3.2 Discrimination	/ 34
3.3 Forced Labour	/ 36
3.4 Freedom of association and collective bargaining	/ 38
3.5 Compensation	/ 42
3.6 Contracts and human resources	/ 46
3.7 Occupational safety and health	/ 50
3.8 Working time	/ 53
4. Conclusions	/ 56

“I really want to love my job, and I want to work hard. However, for four or five consecutive years, wages have been deducted - initially RMB 300 and recently RMB 1400. Workers’ bonus payments are not enough to cover these deductions! [...] Are we here to work to make money, or to give subsidies to the state? [...] Is it necessary to push the employees to the point where they can’t bear it?” [74]

1. Introduction

The Chinese locomotive and rolling stock industry is in crisis. Declining demand at home and the Covid-19 pandemic have taken their toll on the industry, which is highly indebted.¹ A recent McKinsey report estimates that the China Railway Rolling Stock Corporation (CRRC), the world’s largest manufacturer of locomotives, new vehicles, and rail cars runs at 50 percent below its capacity. The company seeks to increase its export share with low prices. According to press reports, CRRC won public tenders in the US with a price advantage of about 15 percent.² The economic downturn and tight margins in international competition directly impact workers and increase the risk of labour and human rights violations.

While low prices are good news for tight (local) state budgets, public buyers need to be aware that aggressive price competition negatively impacts workers in the Chinese locomotive and rolling stock supply chain. This report shows that the industry’s rising economic problems translate into social insecurity for workers. This, in turn, provides growing ground for worsening labour conditions, rights violations, and unfair treatment.

The Chinese trade union is not a force to count on and collective action will, in the best of cases, help to address blatant rights violations such as wage arrears. Many risks, therefore, develop in grey zones of unfair but not necessarily illegal management practices. Comprehensive human rights due diligence needs to pay attention to these grey zones because restrictions to freedom of association and collective bargaining leave unfair practices in those realms unchallenged.

This report makes use of workers’ writings in social media to shine light on working and living conditions in the Chinese locomotive and rolling stock industry. Expressions of discontent and sharing of information in social media can, to some extent, mitigate the lack of independent information. Uncovering and exposing these writings may enhance public buyers’ understanding of the human rights implications of purchasing contracts.

2. Method and data

This report uses a novel approach to identify labour and human rights violations in the Chinese locomotive and rolling stock industry. We collected information about grievances and labour rights violations from public internet forums, where workers reach out for help, give advice, or share information and experiences. We analysed this data with our platform social@risk™, a framework for qualitative content analysis and quantitative trend analysis of social media data (see www.globalworks.se for further information).

Data for this report come from 22 internet forums for workers in locomotive and rolling stock industry (see appendix I). These forums relate to several original equipment manufacturers (OEMs), that is, companies that manufacture parts or products that are intended to be incor-

porated into end products of other companies, and tier-1 suppliers listed in appendix II. In addition, we included forums on the China Railway Rolling Stock Corporation (CRRC), which maintains strategic partnerships with two OEMs (Alstom and Bombardier³) and several tier-1 suppliers (Voith, Victall, Knorr-Bremse) listed in appendix II. Factories within the locomotive and rolling stock industry are interconnected. They often deploy similar management practices and provide comparable working conditions. To collect workers' experiences beyond the companies listed in appendix II, we included forums concerning workers in the state-owned railway infrastructure industry as well as privately owned suppliers and strategic partners of the state-owned core. By combining insights from available data, general conclusions can be drawn about labour and human rights risks in the locomotive and rolling stock sector.

The analysis is envisioned to support a human rights due diligence process as proposed in the UN Guiding Principles on Business and Human Rights (UNGPs). In particular, the analysis provides information on the following:

- Violations and grievances that workers mention and describe in social media
- Qualitative descriptions of abusive practices, violations, and grievances
- Quantitative data on rights-violating practices
- Insights into mechanisms and causes of ongoing rights violations

Compared to audit or survey data, the analysis does not require approval from factory managers and therefore avoids any direct influence on workers' views or agenda setting. Compared to (undercover) investigative reports, this study processes a large amount of data that can be used to systematically identify and quantify (at least in relative terms) industry-related risks for human and labour rights violations.

2.1 Data

We scraped data from 12 forums related to China Railway and Rolling Stock Corporation (CRRC). Among the CRRC forums, two are general forums and eight are site-specific. In addition, there are two forums on China Southern Railway and China Northern Railway, which were merged into CRRC in 2015. The second group of four forums relate to China Railway Group (CREG), a large-scale state-owned enterprise that is involved in the construction of (high speed) railway infrastructure in China and abroad. Two of the CREG forums are site-specific and two are general forums.

While the core of the locomotive and rolling stock industry in China is state-owned, suppliers and joint-venture partners come from the private sector. We seek to capture this dimension in our data sample with a group of forums containing KTK Group, Siemens, Alstom, China Railway, Shanhaiguan Bridge Group, and Sany Group.

We collected approximately 240,000 social media posts related to these manufacturers. Figure 1 shows the distribution of posts divided by manufacturer and gender. 98% of the collected posts relate to four manufacturers. Two of these (CRRC and CREG) are state-owned and two (Sany and Siemens) are private corporations. Besides Sany Group and Siemens, the private sector forums in our data sample are small. In figure 1, they are aggregated into the category "others". About 14% of social media users state in their profiles that they are women. This number, however, is probably higher as women often use male aliases to avoid harassment and dating requests.

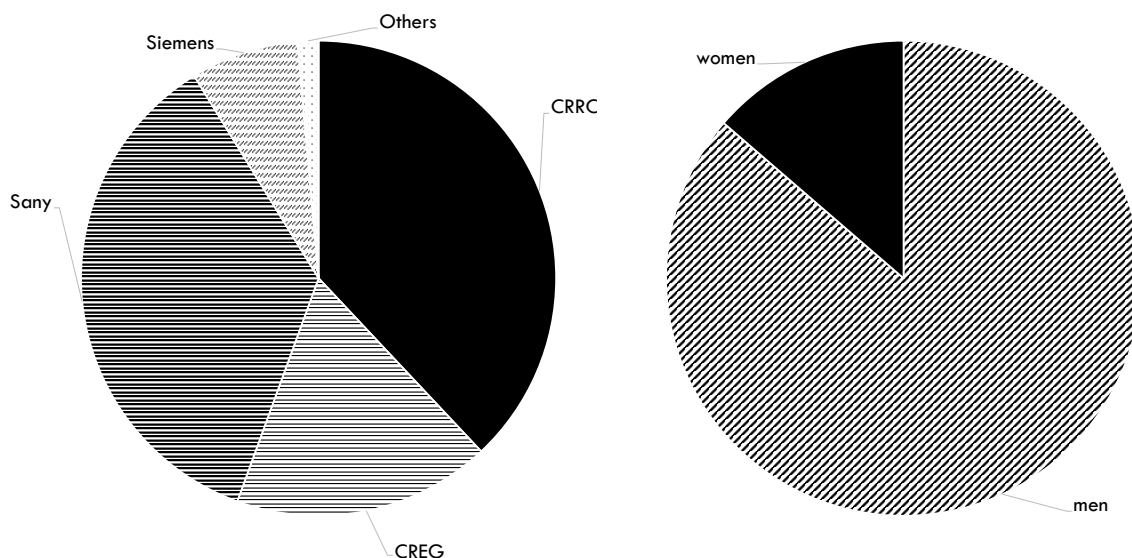


Figure 1: Distribution of social media posts by manufacturer (left) and sex (right).

The data covers the period 2013 – 2022, which allows us to observe and deduce long-term trends. This information is important to answer questions such as “Have certain labour issues become more important over time?” or “Do certain rights violations occur more often during certain months of a year?”

We use information about strikes from China Labour Bulletin (CLB), a CSO based in Hong Kong. CLB systematically searches newspapers and social media for information about collective action. All information is publicly accessible at <https://maps.clb.org.hk>. We explicitly state when we make use of CLB data.

To provide context to our analysis, we deploy statistical data, newspaper articles, and academic literature. In addition, we searched for information about discriminatory recruitment requirements in job advertisements on WeChat. Finally, we complemented our findings with worker comments on Zhihu, a Chinese social media platform similar to Quora.

2.2 Identification of topics

We followed a four-step procedure to identify labour and human rights-related topics:

1. Identify social media terms and expressions that workers frequently use to describe their problems. Significant keywords were selected through a word count based on all social media posts.
2. Rank words according to their frequency and select words relevant to labour issues. The resulting list consisted of about 150 terms.
3. Link keywords to topics that describe a labour issue or violation. Note that a keyword can be connected to multiple topics.
4. Link topics to the Better Work Global Compliance Assessment Tool (CAT).⁴

Table 1 shows seven general topics that workers frequently mention. These issues can be interpreted as the result of a stakeholder consultation, where employees give their views on the most salient problems. The table presents the relative importance of each problem based on data from the past decade. We further disaggregated total weights into the past three years since the Covid-19 outbreak and the time before the pandemic (2013-2019).

		Total	2022	2021	2020	2013-2019
CAT1	Internships	12.07	6.89	8.13	9.34	13.76
CAT2	Recruitment	5.42	2.58	4.21	4.81	6.13
CAT3	Resignation	3.10	4.75	3.43	4.21	2.66
CAT5	Deductions and arrears	14.19	27.22	18.85	6.89	12.67
CAT6	Dispatch and outsourcing	5.72	4.52	5.11	6.85	5.82
CAT7	Exhaustion	3.26	1.95	2.57	2.94	3.60
CAT8	Overtime	13.06	15.61	20.24	4.92	6.97

Table 1: Relative importance of topics (measured as % of all posts) in social media discussions.

Wage deductions/arrears (total: 14.19%) and overtime (total: 13.06%) are the two most important issues. About 27% of all categorised posts are related to these issues. Since 2021, the relative weight rose to about 40%, highlighting that financial pressure during the current economic downturn has become a major problem for workers. Another consequence of the difficult economic situation in China and the locomotive and rolling stock sector is a rising concern about resignation. Before the Covid-19 outbreak, the relative weight of this topic averaged 2.66% (2013-2019). Since then, the issue comprises about 4% of all categorised posts (2020 - 2022).

Between 2020 and 2022, workers wrote little about problems related to internships, recruitment, and general health status (exhaustion) compared to the period of 2013-2019. These developments are probably also a consequence of economic decline. The industry has become less attractive to job seekers, which explains fewer mentions of internships and resignations. And as workers are increasingly worried about making ends meet and keeping their jobs, less attention is given to complaints about working conditions and hardships.

Table 2 disaggregates the relative weights of topics by supplier. The topic weights are measured as percent shares of all categorised posts relating to a manufacturer or group of manufacturers (others). The relative weights indicate that labour dispatch and internships constitute the most important topics at all manufacturers. Other topics vary across the five groups. At CRRC, CRCC, and Sanyi, overtime and recruitment rank third and fourth. At Siemens, none of the five remaining issues gains much attention. And in the group “others”, recruitment is followed by the topic of exhaustion.

		CRRC	CRCC	Sanyi	Siemens	Others
CAT1	Internships	21.98	7.46	9.38	15.23	20.00
CAT2	Recruitment	8.13	4.01	3.24	0.57	9.54
CAT3	Resignation	1.77	3.41	3.16	0.72	2.15
CAT5	Deductions and arrears	2.26	3.35	2.95	4.45	2.00
CAT6	Dispatch and outsourcing	25.32	69.79	12.72	0.94	45.01
CAT7	Exhaustion	2.58	2.16	2.75	0.14	5.81
CAT8	Overtime	4.22	5.44	11.57	0.36	2.45

Table 2: Relative importance of topics by supplier (measured as % of all posts related to a supplier).

The overall pattern suggests that in most manufacturing companies, workers engage in similar discussions. The main difference seems to be overtime, which receives less attention in the two state-owned enterprises compared to privately owned Sanyi. The qualitative analysis shows that this difference is a result of the distinct wage system at state-owned enterprises. Yet in recent years, state-owned enterprises have begun to emulate private management approaches as regular employees are replaced by dispatched workers. Long working hours emerged as a common characteristic of the entire industry.

We organised the seven topics of table 1 in relation to underlying risk factors and the Better Work Global Compliance Assessment Tool (CAT). Better Work is a partnership between the UN's International Labour Organization and the International Finance Corporation. Their assessment tool is used to evaluate compliance with core international labour standards and national labour law. The topics of table 1 related to the CAT structure as follows:

- *Internships* are discussed under CAT1: Child labour.
- *Recruitment* is detailed under CAT2: Discrimination.
- *Resignations* are analysed under CAT3: Forced labour.
- *Wages* are examined under CAT5: Compensation.
- *Labour dispatch and outsourcing* are detailed under CAT6: Contracts and human resources.
- *Tiredness and exhaustion* are issues analysed under CAT7: Occupational safety and health.
- *Overtime* relates to CAT8: Working time.

Some important labour issues listed in the CAT are poorly represented in online forums.

- **Child labour:** Our database contains information about student labour, which can constitute a child labour offense. However, there is little information about other forms of child labour. Therefore, we used academic articles and statistical data to identify risk patterns. The assessment is presented under CAT1: Child labour.
- **Discrimination:** Workers rarely discuss discrimination. However, we found that some discriminatory practices are related to specific employee groups such as students (CAT1) and dispatched/outsourced workers (CAT6). In addition, we analysed recruitment advertisements to identify discriminatory selection criteria. We present our findings under CAT2: Discrimination
- **Strikes and labour action:** Organising workers' rights and interests is a politically sensitive issue that few users in our database mention. To uncover risk patterns and trends, we relied on data from China Labour Bulletin, a Hong Kong-based CSO collecting information on strikes. We examine this issue under CAT4: Freedom of association.

2.3 Qualitative analysis

We read and assessed thousands of categorised posts to find grievances and rights violations. The qualitative analysis rests on the principle that single voices matter because any injustice or violation calls for remedy.

But even though individual posts can provide important information, they could also contain incorrect claims or biased views. Therefore, to ensure that insights are relevant and robust, findings are presented within a broader context featuring posts from different users

making similar claims, posts from different users confirming a particular issue or practice, or posts from different users adding up to a pattern of rights-violating practices. This approach ensures that we do justice to single voices and, at the same time, enhance the reliability of the findings.

We coded each post that informs a qualitative claim. Numbers in brackets, i.e., [1] [2] [3], are references to these posts. The coding list is not part of this report. We keep it encrypted and separate from the raw database to ensure that single users cannot be traced even in case of a data breach on our server. Other sources are referenced with footnotes.

2.4 Quantitative analysis

We conducted quantitative textual analysis assessing the relevance and relative importance of posts relating to a specific labour issue:

- We discerned the number of posts belonging to a topic as a share of all categorised posts. Categorised posts are messages that include one or several of the keywords that we identified in our four-step analysis (see section II.2). This number informs us about the relative weight of a topic, i.e., its importance in social media discussions.
- We depicted this share by month for the past ten years as a trend indicator. We chose the past ten years because we had comparatively few posts from the years before. As a result, small changes in the absolute number of posts translate into large changes in shares, which renders the resulting trend erratic and difficult to interpret.
- We conducted t-tests to compare monthly posting patterns before (2013-2019) and after the Covid-19 outbreak (2020-2022). These tests tell us whether a potential trend change in recent years is statistically significant. Significance in this context means that there is a very low likelihood (less than 5%) that measured differences between the two periods are by chance only.

2.5 Risk assessment

The collected data is suitable for a human rights due diligence analysis as detailed in the UN Guiding Principles on Business Human Rights (UNGPs). The UNGPs advocate a risk-based assessment of human rights issues where brands should prioritise the most salient problems. **Salience** means “issues that stand out because they are at risk of the most severe negative impact through the company’s activities or business relationships.”⁵ A negative human rights impact is salient under one or more of the following characteristics: its scale (gravity of the impact), scope (number of individuals affected), or irremediability (ease of undoing consequences).⁶ The UNGPs do not provide a single standard for evaluating or grading risks, as these may vary across businesses, sectors, regions, and countries. We defined evaluation criteria for risk assessments as listed in table 2.

Any human rights violation that is grave in nature and/or causes consequences that are difficult to mitigate should have priority, irrespective of the number of people affected. Therefore, we determine salience first with the highest grade in scale and/or irremediability. For example, if an issue is graded “very high” “in terms of scale, the total risk grade will be very high

regardless of whether other grades are lower. The same approach is used if irremediability receives a higher grade than scale and/or scope. If scope constitutes the highest risk grade of an issue, we calculate the average of all grades based on the following weights: low=1, moderate=2, medium=3, high=4, and very high=5.

Trend analysis bring to the fore risk dynamics, thereby adding information suggested in the comments to UNGP 29: “By analysing trends and patterns in complaints, business enterprises can also identify systemic problems and adapt their practices accordingly.” An issue may be emerging, declining, or static. A trend may also entail a seasonal pattern i.e., that an issue receives relatively more attention during certain time periods each year.

The **grey boxes** displayed under each of the following topic sections provide a summary that contains information about major risks involved, overall salience grade, sub-grades for scale, irremediability, and scope, as well as the identified trend pattern (rising, declining, static, seasonal).

Saliency	Scale	Scope	Irremediability
Low	Negative impact limiting economic rights on a <u>single occasion</u> , for a <u>short period</u> .	<u>Single cases</u>	<u>Monetary compensation for economic loss is appropriate and sufficient.</u>
Moderate	Negative impact limiting economic <u>plus social and cultural, and/or political rights</u> on a single occasion for a short period.	<u>Few cases without a systematic pattern</u>	Monetary compensation for economic loss <u>and other damages is appropriate and sufficient.</u>
Medium	Negative impact limiting economic plus social and cultural, and/or political rights <u>repeatedly</u> , for a short period.	Few cases <u>suggest a systematic pattern</u>	Monetary compensation for economic loss and other damages is appropriate <u>but not sufficient.</u> <u>Assessment of legal liability under civil law and personnel consequences is required.</u>
High	Negative impact limiting economic plus social and cultural, and/or political rights <u>frequent</u> .	Sufficient cases to <u>establish and confirm a systematic pattern</u>	Monetary compensation for economic loss and other damages is appropriate but not sufficient. External review in light of <u>civil and criminal law is mandatory.</u> <u>Personnel consequences are required.</u>
Very high	Negative impact limiting economic plus social and cultural, and/or political rights <u>permanent</u> .	Sufficient cases to establish and confirm a systematic, <u>widespread pattern</u>	Monetary compensation and external legal action are <u>mandatory but not sufficient to mitigate the harm done.</u>

Table 3: Globalworks' risk grading criteria.

3. Findings

Findings in this section are structured along the Better Work's Global Compliance Assessment Tool (CAT). We assess each topic quantitatively and qualitatively. In addition, we look at the development of each topic over time. At the beginning of each section, we suggest a risk categorisation.

3.1 CAT 1: Child labour

- *Core Conventions: C138 Minimum Age Convention, 1973 and C182 Worst Forms of Child Labour Convention, 1999*
- *Other relevant ILO documents: R146 Minimum Age Recommendation, 1973; R190 Worst Forms of Child Labour Recommendation, 1999.*

Risk: Work that is harmful to children's physical and/or mental development.
Scale: Very high; **Scope:** Medium; **Irremediability:** Very high
Trend: Declining
Trend change: Statistically significant shift after 2019
Salience: Very high

China Labour Bulletin, a Hong Kong-based NGO, concluded in a report from 2019 that ten years ago, child labour constituted a “widespread, systematic, and increasingly serious problem in China.” Today, it is stated, “the forces creating both the supply of and demand for child labour have diminished considerably, and although there are still occasional reports of child labour in the Chinese media, the situation has improved.”^[1] According to the report, the single most important risk factor remaining is poverty in rural areas, in combination with low quality in education and high school dropout rates.

The academic literature corroborates that poverty and non-Han ethnic origin are the two most important factors predicting the likely occurrence of child labour. For example, a study based on nationally representative data from the China Family Panel Study suggests that child labour posed a significant risk in China ten years ago. Tang et al. (2018) found that 7.74% of children aged between 10 to 15 years were engaged in labour in 2010. About 90% of child labourers were still in school. Children worked on average 6.75 hours per day and spent 6.42 hours less per day on studying. The school dropout rate for working children was 11.57%, which was 9.6% higher than that for children who were not working. The study also confirms that minors in rural areas are more likely to get involved in child labour.⁸

Incidences of child labour most likely enter global supply chains at lower tiers and are therefore hard to predict. However, the main risk factors, namely poverty and non-Han ethnic origin, are unequally distributed across China. Thus, companies operating in high-risk regions or sourcing from high-risk regions should carry out a heightened human rights due diligence. As a general guidance, section III.1.1 identifies risk regions.

Part II of this report shows that some of the locomotive and rolling stock corporations that are included in this research project participate in internship programmes with schools in Xinjiang, Gansu, and Guangxi. Such programmes may include students who are exposed to risks of exploitation and forced labour due to their vulnerable position. If these programmes involve pupils below the age of 18, forced labour risks turn into instances of child labour. We investigate exploitative internships and the associated risk of child labour in section III.1.2

3.1.1 Regional risk of child labour

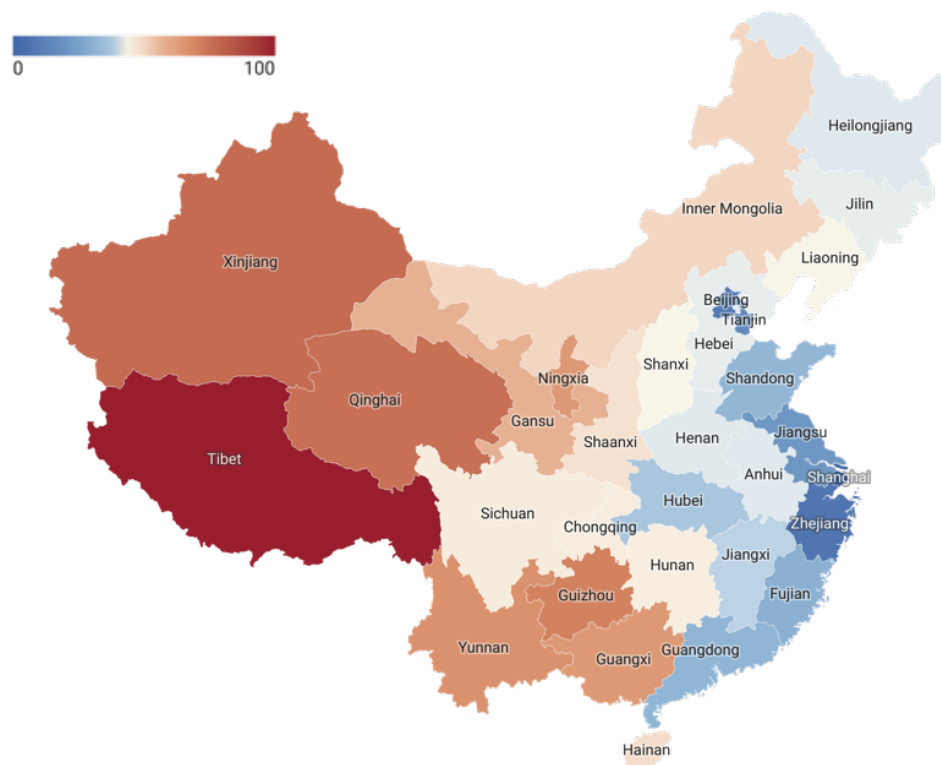


Figure 2: Globalworks' child labour risk index by province (based on data from National Bureau of Statistics of China).

Non-Han ethnic groups are often economically marginalised and socially stigmatised. In combination, these two factors increase vulnerability and, by extension, the likelihood of exploitative practices such as child labour. As a result, the prevalence of child labour remains highest in Northwest China and Qinghai-Tibetan regions.⁹ We calculated a regional risk index based on two predictors for child labour: rural disposable income and the share of non-Han ethnic citizens. The index ranges between 0 and 100, where low numbers indicate low risk and v.v. Figure 2 shows the results indicating that Tibet, Qinghai, Xinjiang, Gansu, Ningxia, Yunnan, Guizhou, and Guangxi entail a comparatively high risk.

3.1.2 Child labour through internships

Internships are the most common institution facilitating child labour in China. For the past decade, 15-22 million students have been enrolled in secondary vocational schools every year.¹⁰ Vocational curricula give a prominent role to practical training through internships. The ILO acknowledges that such programmes can facilitate a positive school-to-work transition when they are properly planned, managed, and monitored.¹¹ But when employers and schools abuse students' vulnerable position (they cannot graduate without passing these internship programmes), vocational training turns into incidences of forced labour and, for students under the age of 18 years, into incidences of child labour.

In China, multiple investigations from CSOs¹² and academic research¹³ have shown that, for many students, vocational training means performing monotonous work for long hours with wages below those of regular workers performing the same tasks. The 2019 UNICEF report on child labour in global supply chains analyses child labour in the Chinese electronics sector, which is a major supplier to the locomotive and rolling stock industry.¹⁴ The report cites a study of student interns who were 16.5 years old on average. The interns reported standing for more than 10 hours per day performing tasks unrelated to their school subjects. Internships were often extended to meet production needs, ranging from three months to a full year. The report mentions other studies that have discovered that students, who work long hours in violation of restrictions on vocational training, were often not paid production bonuses that regular workers could earn. Neither did the students receive social insurance. Refusal to work or the desire to leave early could result in not graduating from school.

The data collected for this report suggest that state-owned corporations have internship-related practices different from those of private corporations. On one hand, overtime seems to be less of an issue for interns – or at least we found very little mentions of overtime in recent years. On the other hand, internship periods are even longer than in private enterprises, ranging from six months to two years.

Management approaches transforming students' vulnerable position into forced labour seem to be distinct as well. On a general note, internships in the locomotive and rolling stock sector are not only a necessary precondition for graduation but they are also the most important entry point for regular employment. In this context, students' writings distinguish between social recruitment and school recruitment. The former implies that students apply directly for jobs while in the latter case, the school functions as mediator or facilitator.

School recruitment consists of two different agreement types: two-party and three-party. In a two-party agreement the school does not assume a formal role other than facilitating on-campus interviews. A three-party agreement, by contrast, involves the student, the company, and the school. The main difference between these agreements is the level of commitment. A two-party agreement expresses an intention but is not legally binding. When the school assumes a formal role, the student and the enterprise are committed and a breach of contract comes with the obligation for compensation.

According to legal practice, the highest penalty to a three-party agreement is RMB 5000 (about € 650) if the employee is not bound to a confidentiality clause, which is not applicable for newly recruited staff.¹⁵ Even though Chinese legislation permits the use of such fees, they can also be interpreted as a form of state-tolerated forced labour because a recruit who regrets his/her decision to commit may be forced to work under “the menace of penalty”. Based on students' social media comments, we identify four problems:

1. Financial penalties: Three-party agreements are signed before graduation, requiring students to labour as interns at low wages for up to two years [2] [3] [4] [5] [6]. When they regret their decision, they have to pay heavy fines [7] [8] [9] [10]. A student writes:

“They all use this method to retain people. If you want to run away, you will lose money, and you will stay. After a few years, new students will come again, and you can run away [11].”

Thus, students commit to working at a reduced rate for an extended period under the menace of penalty. This meets the ILO criteria for forced labour. It appears from students’ experiences that the menace of penalty is not only limited to fines.

2. Power abuse: Three-party contracts do not effectively prevent enterprises from breach of contract. Students report about such contracts in the case of one company included in this research project. Apparently, the company lowered students’ wages. The pay level, however, was not stipulated in the three-party contract. If a student refused to accept the changes to the terms of employment, it would be the student, not the company, who breached the contract [12]. What is more, three-party contracts bind students to their internships but do not obligate companies to offer regular employment afterwards [13] [14].

3. Deception: Students not only have to accept unilateral changes in working conditions but may also be lured into a contract with insufficient or incorrect information. Students’ complaints on social media clearly show that the level of transparency is low. They are not informed about pay, work content, or location of the assigned internship [15] [16]. A student explains:

“Since it is time for the autumn recruitment, our school is looking for people. But they provide very little information about the working conditions at the different factories [17].”

The information students receive can be false or exaggerated. For example, one student asks why the school recruitment information states an internship wage that does not reflect the fact that the employing company has lowered wages [18]. On social media, students try to verify the information they have got from HR departments and interviews with recruiters [19] [20]. Apparently, neither enterprises nor schools assume responsibility for the information provided during school recruitment being correct and reliable.

4. Exploitation: Internships are not connected to curricula and/or lack educational content. A student’s skills and subjects at school seem not to be relevant for recruitment [21] [22]. One student writes that he is studying Arabic. During school recruitment he was told that he first has to do a one-year internship at the factory floor [23]. Another student wonders how it is possible that a company can announce a job for a legal assistant through school recruitment and then require the job candidate to first do an internship at the factory workshop [24]. Students’ posts also indicate that internships lack a clear plan and purpose. A student writes:

“The job content is to wander around the workshop. There is no specific work content, no relation to the company’s business, and even no work position [25].”

Generally, the information presented here reflects ILO forced labour indicators of “abuse of vulnerability” and “deception”. Students are vulnerable because they have no choice but to accept internships if they want to graduate. For the chance to receive a regular employment

contract, students must submit to exploitative practices such as labouring as an intern for up to two years. Three-party agreements safeguard the interests of employers and schools but offer insufficient legal protection for students. For students under 18, these forced labour practices represent incidences of child labour.

3.1.3 Trend analysis

Figure 3 depicts the topic of student interns since January 2015. About 10 – 20% of all categorised posts relate to this issue. The graph shows a declining trend. Before 2020, seasonal fluctuations of the topic were erratic and usually peaked around September. More recently, the cyclical pattern has been less distinct due to restricted recruitment during the pandemic. In 2023, however, the trend is picking up again. The mean of the mentions ratio declined from 13,76% to 8,20% between the period of 2013-2019 and 2020-2022. This trend shift is statistically significant (see appendix X) and indicates that the scope of internship related issues has dropped.

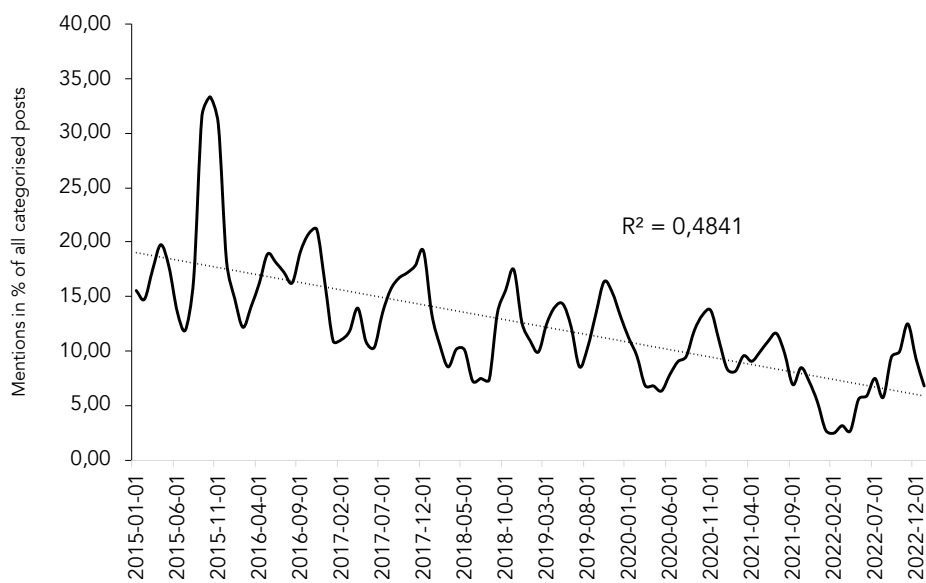


Figure 3: Mentions of student interns by month as a share of all categorised posts.

3.2 CAT 2: Discrimination

- *Core Conventions:* C100 Equal Remuneration Convention, 1951 and C111 Discrimination (Employment and Occupation) Convention, 1958
- *Other ILO references:* C183 Maternity Protection Convention, 2000; C159 Vocational Rehabilitation and Employment (Disabled Persons) Convention, 1983; C175 Part-Time Work Convention, 1994; C158 Termination of Employment Convention, 1982; R191 Maternity Protection Recommendation, 2000

Risk: Rights violations are applied systematically to (vulnerable) worker groups, recruitment is based on discriminatory criteria.
Scale: Varying degrees; **Scope:** Varying degrees; **Irremediability:** Varying degrees
Trend: Declining (recruitment related issues)
Trend change: Statistically significant shift in 2019
Salience: Medium – very high

Discrimination is a complex issue as it intersects with rights-violating rules that are not uniformly applied. Because these practices are illegal or at least in a grey zone, there is little information available allowing to evaluate discriminatory effects of such rules. However, our analysis suggests that student interns and dispatched workers are subject to discriminatory practices because they earn less than regular workers even though they perform the same tasks. Section II.1.2 elaborates on student workers, and section III.6.2 on dispatched workers.

3.2.1 Recruitment

Besides discrimination on the job, unequal treatment occurs during recruitment, i.e., certain groups are preferred or disadvantaged. We tried to grasp this issue with an analysis of job advertisements. We searched on WeChat for employment offers from manufacturers mentioned in appendix 2. A review of relevant job advertisements shows:

- The most common discrimination criterion is age. Almost all posts that we screened for this analysis imposed an age limit on blue-collar workers. A CRRC recruitment post for example was searching for candidates that are 18 – 30 years old [26]. A job search for Grammer mentioned an age limit of 18 – 40 years [27] and a post for Siemens limited candidates to ages 18 – 45 [28].
- In the past, gender discrimination has been common in the Chinese manufacturing sector. Many factories have preferred to employ women. Today, gender is rarely a recruitment criterion due to labour shortage. Still, in some fields it continues to be practiced. For example we found that Voith recruited warehouse managers stating explicitly that the company was only looking for women [29]. Victall announced several positions that were only open for men [30].
- Some recruitment posts excluded workers from specific ethnic groups. A post for Grammer, for instance, ruled out candidates from China's four largest ethnic minorities Zhuang, Hui, Manchu, and Uyghur [31].

- Appearance is a relatively common discrimination criterion. A recruitment post for Grammer, for example, excluded candidates that have tattoos that are visible when wearing short sleeved shirts or that are larger than a coin [27]. A CRRC post stated it did not want candidates with skin allergies [32] and KTK Group excluded candidates with “strange hairstyles” [33].
- Some recruitment posts discriminate against workers who are not willing to give up on their legal rights. For example a recruitment post for Grammer required candidates to be willing to accept the company’s overtime arrangements and as little as two days of rest per month [27]. Recruitment adds for Voith and Grammer stated hourly rates including overtime pay [31] or overtime hourly rates [34], which violates legally binding overtime pay calculations (1.5 times of the regular hourly wage during work days, 2 times during weekends, and 3 times during red days). A recruitment post for Voith stated that workers without health check will not get health insurance [34].

3.2.2 Trend analysis

While there is no systematic data on discrimination, we can still assess the relative weight of recruitment related discussions in social media. The trend line follows a cyclical pattern that is similar to internship mentions presented in figure 4. This parallel development emphasizes the central role of student interns as the primary recruitment pool in the locomotive and rolling stock industry. The posting pattern suggests that recruitment-related risks increase in spring after Chinese New Year and peak in autumn. In recent years, however, this pattern has been less distinct. Descriptive statistics in appendix III.B suggest that the average weight of recruitment-related discussions has declined from 12.01% to 5.83% after 2019. This trend shift is statistically significant and, therefore, suggests that the scope of recruitment-related issues is comparatively low. Figure 4 indicates that a trend change may have happened already in early 2019. This could imply that the trend shift is not primarily a result of the Covid-19 restrictions even though they may have contributed to it.

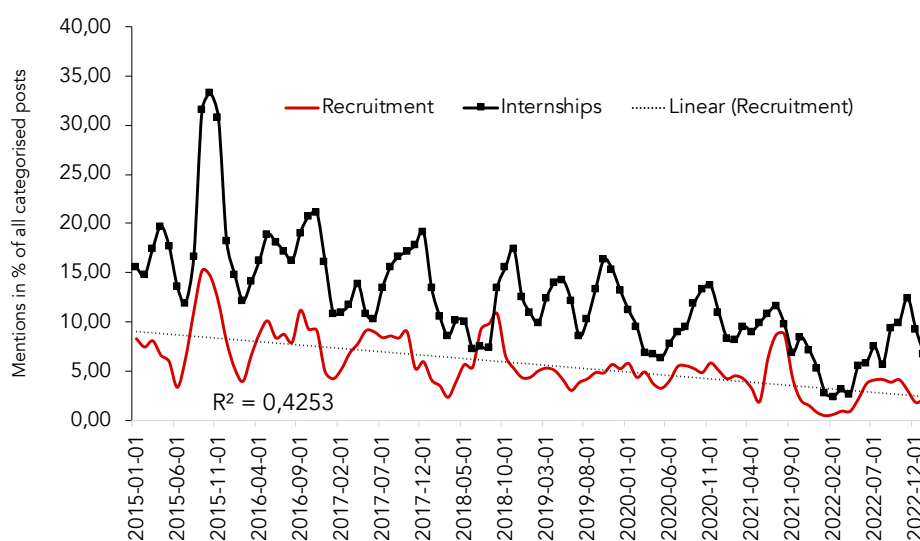


Figure 4: Relative share of posts mentioning recruitment and internships.

3.3 CAT 3: Forced labour

- Core Conventions: C29 Forced Labour Convention, 1930 and C105 Abolition of Forced Labour Convention, 1957
- Other ILO references: C181 Private Employment Agencies Convention, 1997 and C1 Hours of Work (Industry) Convention, 1919

Risk: Administrative obstacles to resign, penalties for resignation, non-wage payment for the last month.

Scale: Medium; **Scope:** Very high; **Irremediability:** Moderate

Trend: Increasing and seasonal

Trend change: Statistically significant shift after 2018

Salience: High

3.3.1 Resignations

According to the Chinese Labour Law, workers can resign with a one-month notice (with a notice of three days during probation). However, many companies establish internal rules and requirements preventing workers from leaving in due course. The first obstacle for workers to resign is the opaqueness surrounding resignation procedures. Workers, therefore, reach out to peers on social media inquiring how to quit [35] [36] [37] [38] [39]. In violation of Chinese labour legislation, resignations regularly require superiors' approval:

"I asked the general office to print out the resignation documents. That is, a letter of consent that needs to be signed by the leader and a work handover form [40]."

"Ask the office or human resources for the resignation document, and then fill it out and ask the relevant leader to sign it and hand it over to the agency [41]."

Managers may use their discretionary power to punish workers who want to resign:

"When I told them that I am going to resign, they increased the pressure more and more! They are not afraid of employees suing them, it is said that once employees sue, the company will win! [42]."

"I resigned and they maliciously procrastinate and do not process it. It's disgusting [43]."

In the locomotive and rolling stock industry, turnover control relies on financial lock-in strategies. Because most new staff come directly from vocational schools and universities as interns, three-party agreements between student, school, and employer serve as a stick (see section III.1.2). A worker writes: "Resigning within 3 years is considered a breach of contract [44]." Contracts regularly stipulate fines for a breach of contract. A worker warns newly recruited staff:

"If you want to resign before you have joined the job, you will have to pay RMB 5000 for breach of contract. But you will need more money if you resign later on [45]."

Another financial lock-in strategy are resettlement allowances. Campus recruitment ties students to an employer but not to a specific factory or location. Often students learn only shortly

before they take up their assignment where they will be stationed. The company will then pay a lumpsum relocation fee. However, if employees resign prematurely, they must return the relocation award. If they don't, their resignation will not be processed [46]. A worker states:

“Too many people have resigned already, so the resettlement allowance was raised, and you have to refund the money if you quit within 5 years [47].”

Employers might come up with additional arbitrary fines. A worker writes: If you resign, you have to pay training fees, at least RMB 8000 [48]. Other workers write that when they resigned they lost their overtime pay [49] [50]. The pandemic offered insights into how far discretionary powers of managers may reach. A worker writes:

“The group leaders in Beijing were afraid of losing their jobs and privately decided to lock-in all staff and workers for a month [51].”

3.3.2 Trend analysis

Besides the first half of 2015 and the first months after the Covid-19 outbreak in winter 2019/20, resignations and recruitment mentions follow the same cyclical pattern. The parallel elaboration of the two issues implies an inter-dependent relationship. The link between resignation and recruitment can be divided broadly into two phases. Before the pandemic, recruitment preceded resignations, which suggests that workers' odds to resign without obstacles were highest during summer after new recruits had gained first experiences. Since the pandemic, however, the time lag between recruitment and resignation has disappeared. This immediate link between workers flowing in and out is probably a consequence of an industry-wide downturn. Workers write that jobs are dependent on specific projects and more employees are hired through outsourcing and labour dispatch agents. Problems with resigning are now tied to immediate business needs and the resignation process is more ad hoc and unpredictable. We find a statistically significant trend shift after 2018 (appendix III.C). Thus, risks related to resignation were not primarily caused by the pandemic and, therefore, the situation may not significantly improve after restrictions have been removed.

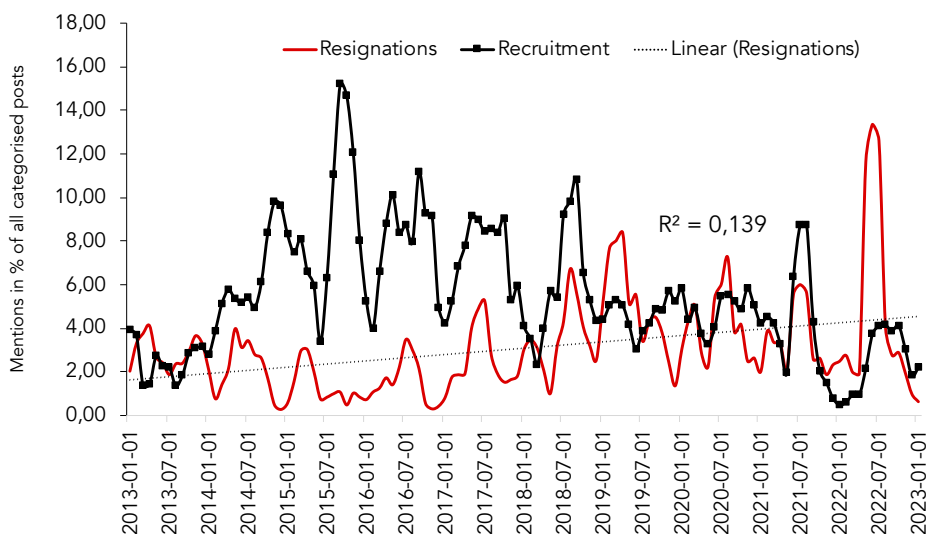


Figure 5: Mentions of resignation and recruitment as a share of all categorised posts by month.

3.4 CAT 4: Freedom of association and collective bargaining

- Core Conventions: C87 Freedom of Association and Protection of the Right to Organise Convention, 1948; C98 Right to Organise and Collective Bargaining Convention, 1949
- Other relevant ILO documents: C154 Collective Bargaining Convention, 1981; R163 Collective Bargaining Recommendation, 1981

Risk: Workers are prevented (with threats and coercive means) from voicing grievances and organising their interests.

Scale: Very high; **Scope:** Very high; **Irremediability:** Very high

Trend: Rising

Trend change: Statistically significant shift after 2015

Saliency: Very high

3.4.1 Labour unions

In China, the All-China Federation of Trade Unions (ACFTU) is the sole legal representative of workers. It is a mass organisation under the Chinese Communist Party, led by cadres pursuing political careers within CCP or Government organisations. For workers' rights, union organizations in the locomotive and rolling stock industry seem to have importance. In the forums we analysed for this report, workers mentioned the labour union in five posts during the past three years. Only two of these posts actually suggest that the labour union may be able to help in solving labour issues [55] [56]. We investigated alternative forums where workers and (former) trade union members discuss the role and significance of the ACFTU. A user writes:

“At present, the main tasks of most trade unions in the country are organizing employee activities (such as watch red movies), distributing welfare subsidies, and cooperating with party building activities. The handling of labour disputes and restricting companies from squeezing employees have not played their due role [57].”

Workers posting in other discussion threads corroborate this view. In response to the questions what trade unions do, a user lists the following:

“Organize friendship events and blind dates; distribute holiday benefits on behalf of the company; organize cultural and sports activities of the work unit during the holidays, such as sports competitions or ball games; writing Spring Festival cards; organizing small literary and art parties [58].”

Trade unions sometimes intervene in rather trivial worker complaints such as worsening food quality in the factory canteen or rising meal prices: “They [the trade union] will listen carefully and give feedback to the relevant parties, and hope that the relevant parties can solve it [58].” Other tasks are to “print and publish posters and brochures.” The trade union is also responsible for organizing “meetings to learn about the spirit of superiors” [58]

With respect to trade union work at state-owned corporations, a former union official explains that trade union work involves three main areas:

- (1) employee education and training, which is mainly ideological education of employees, [...]
- (2) employee benefits, birthday condolences, holiday greetings, annual medical examinations, condolences for employees in difficulty, compensation for mutual insurance for employees, condolences for weddings and funerals for employees and their immediate family members, etc. [...]
- (3) establish a complete trade union organization based on the vital interests of employees. All plans must be approved by the workers' congress before they can be implemented."

Point (3) suggests that trade union representatives, to some extent, promote workers' rights. However, the union representative cautions:

"Trade unions of state-owned enterprises cannot be as strong as the trade unions of western countries. It is impossible, because the trade unions are not independent - not independent of the state at the top, and not independent of the management at the bottom. Therefore, they do not have many rights [59]."

Another post illustrates employers' power over trade union officials. A photographed document details the plan for a large-scale labour retrenchment at Walmart in China (figure 6). The instructions remind immediate union organizations to get in touch with higher-level echelons of the ACFTU to ensure that workers do not start to protest or complain after they learn about their dismissal. What is more, the chairman of the local union is advised to be present during all talks with employees to assure the legitimacy of the dismissals. Officials confronted with the instructions stated that the unions are only entitled to propose voluntary mediation. If employers refuse to participate, there is nothing to be done [60]. Given the current economic downturn in the locomotive and rolling stock sector, the trade unions' inability to defend workers' rights and interests is of particular concern.

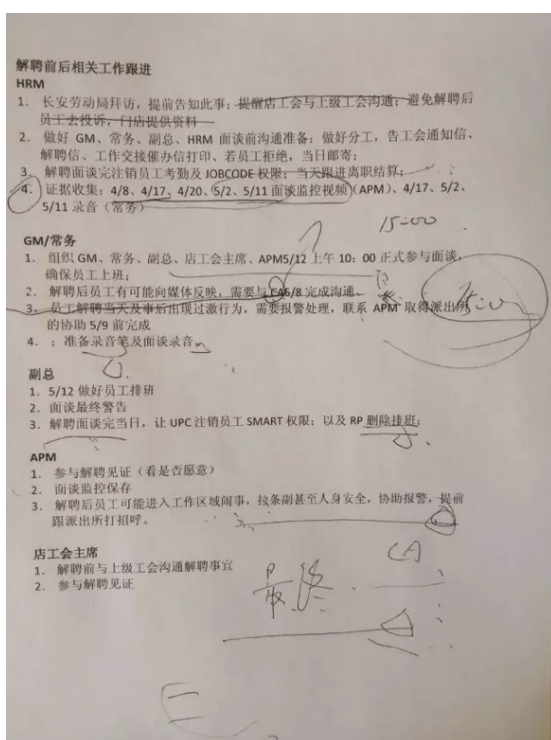


Figure 6: Plan for a union facilitated labour retrenchment at Walmart.

3.4.2 Strikes and protests

Although no explicit law prohibits strikes, neither the Labour Law nor the Trade Union Law acknowledges it as the workers' and trade unions' fundamental right. As a result, participants in a strike can be prosecuted under criminal and civil laws. In recent years, political repression increased with devastating effects on workers and activists who dared to strike or protest or lawyers who filed collective legal actions. Since 2015, CSOs and lawyers have been increasingly under pressure.¹⁶ In a nationwide raid, 300 lawyers and activists were arrested. Detentions, disappearances, and forced TV confessions last until today.¹⁷ **Systematic repression of collective action** leaves workers with few options to claim their rights and interests. Due to the Chinese Government's hostile attitude towards independent labour organising, the International Trade Union Confederation (ITUC) ranks the country under its fifth category, i.e. "no guarantee of rights".¹⁸

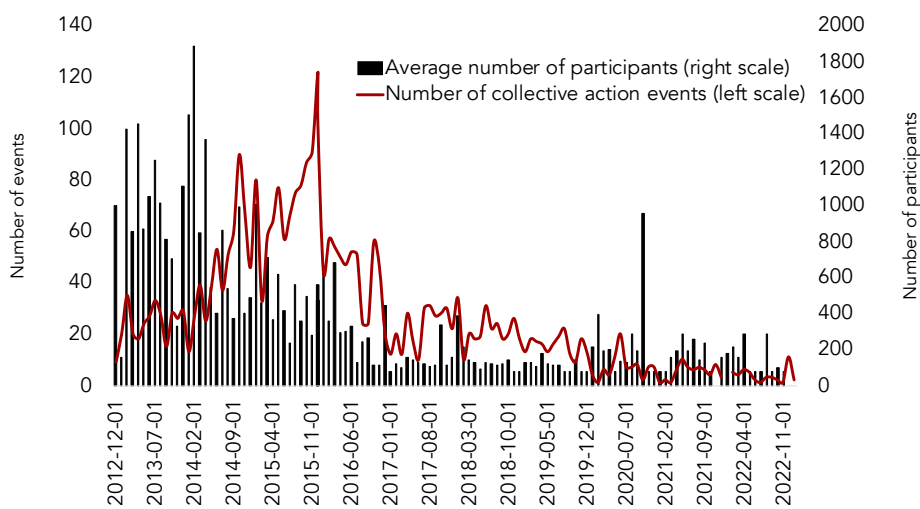


Figure 7: Number of collective action events and participants.

Threats to freedom of association and collective bargaining are state-imposed and shared among industries. We analysed more than 3200 reports about collective actions such as strikes, protests or sit-ins in the Chinese manufacturing sector for the past ten years (since 2013). These events involved approximately 1.5 million workers.¹⁹ Figure 7 illustrates that both the number of events and participants has declined significantly during the past years. After Xi Jinping's crackdown on labour movements and activists, the mean number of events decreased from 49 to 17 and the average number of protesters declined from 771 to 190 (appendix III.D). The shifting trend after 2015 is statistically significant.

It is not only the general crackdown on labour action that is of concern but also the change from interest-based strikes to rights-based protests. Figure 8 depicts this trend. Ten years ago, when Xi Jinping came to power, most collective action events were strikes. This means that demands went beyond legally stipulated rights involving better pay or better working conditions. At the time, China certainly was a dangerous place for labour activists, lawyers, and workers jointly organising their interests.²⁰ However, there was some leeway and occasional windows of opportunity to bargain with employers. During the reign of Xi Jinping, civil society organisations advocating workers interests have effectively seized to exist.²¹

Collective action events in China today are rights-based, that is, workers protest against law violations such as unpaid wages, compensation, or social insurance contributions.²² Workers retreat to rights-based protests because it allows them to act under the banner of Xi Jinping's official line assigning Party and Government officials the responsibility to strictly enforce rules and regulations. Figure 9 shows that this strategy has been successful in the sense that authorities respond to protests mainly with accommodation such as facilitating negotiations between employers and employees and to a lesser extent with repressive actions involving arrests and police intervention.

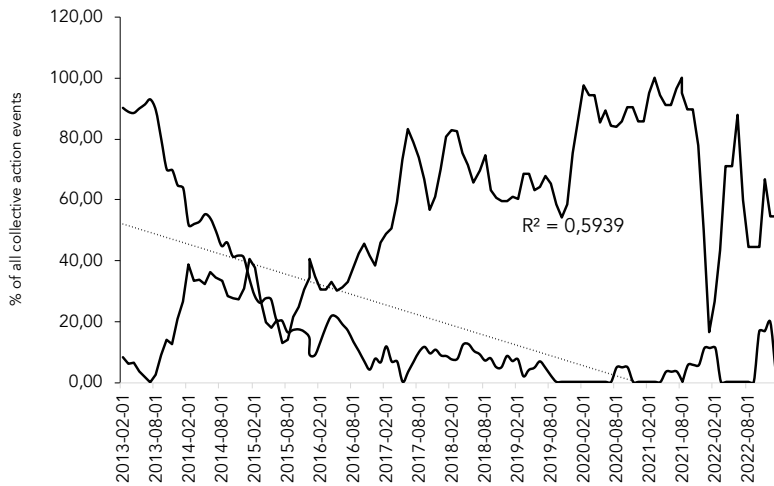


Figure 8: Strikes and protests as a %-share of collective action events.

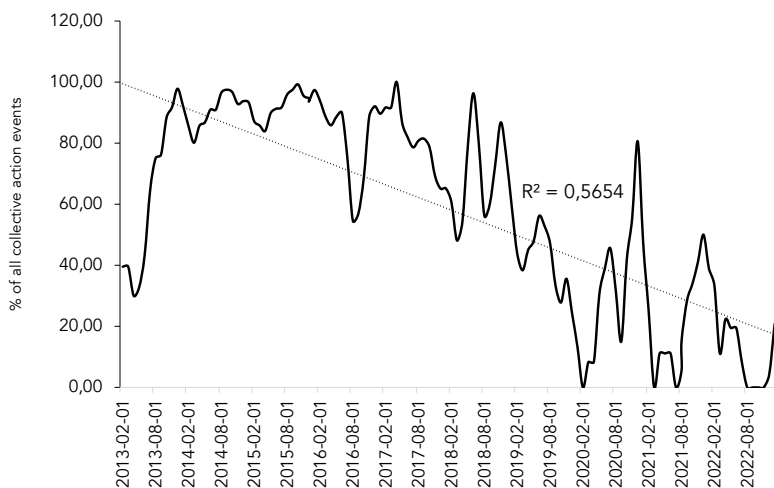


Figure 9: Share of collective action events with repressive means as the primary response.

3.5 CAT 5: Compensation

Risk: Workers do not earn enough to make a living and/or are not paid wages in part or in full.

Scale: High; **Scope:** High; **Irremediability:** Medium

Trend: Continuous

Trend change: No statistically significant shift

Salience: High

3.5.1 Base wage and living wage

Wages in the locomotive and rolling stock industry can be broadly divided into three components: (1) base wage, (2) skill/seniority wage, and (3) performance/compliance-based pay.

Base wages are paid for regular working hours and do not include overtime or bonus payments. In the state-dominated locomotive and rolling stock sector, the base wage is called position wage and seems to be flexibly connected to assignments rather than working hours.

In addition to the base wage, workers receive additional payments such as **skill/seniority wage** [61]. For interns and apprentices, base wages are supplemented with region-specific guaranteed wages, education level pay, and skill wage [62]. These wage components are not linked to performance or behavioural criteria, i.e., employees may receive them within regular working hours. However, workers post pay slips in social media (figure 9) that show that wage components vary monthly, and, as a result, total wages can be halved with short notice [63].

Workers may in addition be eligible to subsidies, performance pay, and overtime pay. In contrast to the above-mentioned components, these payments depend on compliance with behavioural rules, output, and/or working hours [64]. **Performance/compliance-based pay** components constitute up to 50% of a total wage [65]. Workers with low skill and seniority levels are highly reliant on these payments, which increases the risk for exploitation and rights violations.

We collected information about base wages in the locomotive and rolling stock industry from social media posts and compared them with three benchmarks: Asia Floor Wage (AFW), Global Living Wage Indicator (GLWI), average legal minimum wage, and average wage in the Chinese manufacturing sector (see figure 10).

Living wage benchmarks such as the AFW and the GLWI seek to measure what workers must earn to participate in a meaningful social life.²³ A living wage is envisioned to cover food, housing, health, and basic needs, provide room for recreation, support a family, and enable savings. Calculations of living wages are based on ensuring a decent subsistence for workers without taking regional competition into account. This distinguishes them from minimum wages.²⁴

The main factor explaining the large gap between the AFW and GLWI is reproductive work in particular childcare and care for the elderly. Women often must shoulder these burdens but

are still assumed to work full-time or close to full-time in living wage calculations based on the Anker method. Figure 10 also shows that the GLWI endorsed essentially the same living wage level throughout the past decade – a period during which the average wage in China doubled. Taking these caveats into account, it appears prudent to assume that a worker must earn more than RMB 4000 (about € 515) to make a living.

Figure 10 shows that the gap between the base wage and the Asia Floor Wage has been persistent during the past decade. This gap is a robust social risk indicator because low wages are associated with high health risks and risks of exploitation. Workers’ disadvantaged position becomes even more pronounced when we use China’s average wage as a benchmark. Here we can observe strong and continuous growth, which has only recently slowed down due to Covid-19 restrictions.

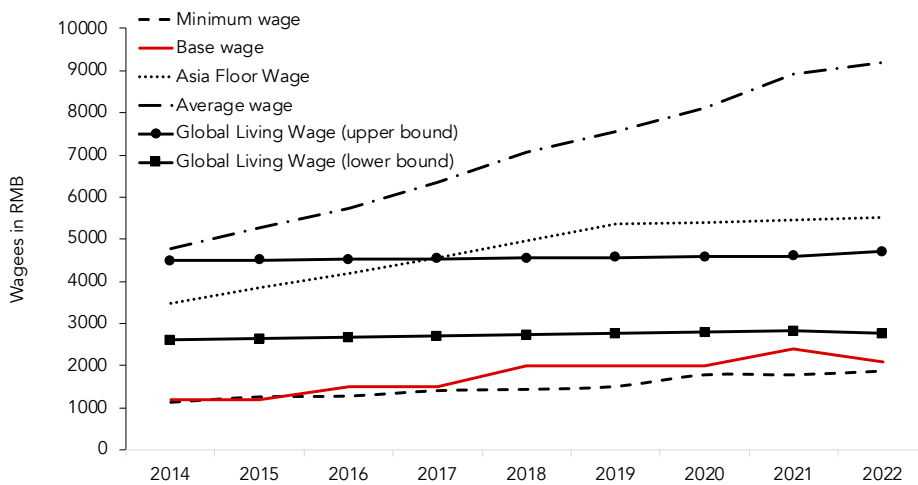


Figure 10: Minimum wage, base wage, and living wage, 2014-2022.

Base wages are close to the legal minimum wage and are only half what workers need to earn a living. If workers must fill this gap with overtime or performance pay for extra work, the wage scheme violates Art. 23 of the Universal Declaration of Human Rights, stipulating that workers should receive a living wage. We assess this issue with a review on take-home wages or disposable income, which refers to the amount of money that eventually ends up in the hands of a worker. At the lower end, workers refer to the range of RMB 3000 – 6000 (about € 385 – 770) [66] [67] [68] [69] [70] [71]. For ordinary workers or front-line workers, performance pay is particularly important, while skill or seniority pay have relatively little impact. A worker explains:

“Assembly work usually exceeds 280 working hours per month. After deducting social insurance, you can earn about RMB 7000 some make even more than RMB 8000. But your salary depends on working hours. There are always a few months when you only get RMB 3,000, and there is no year-end bonus. After one year you’ll get a position raise of RMB 1200, but that is of course only RMB 100 per month [72].”

At another manufacturer the wage for front line workers seems to be limited to RMB 3500 (about € 450). Other regular staff earn position wages plus skill level pay: junior college graduates RMB 1800 (about € 230), undergraduate RMB 3000 (about € 385), and master RMB 6000 (about € 770) [73].

The information that we collected indicates that low-skilled or unskilled workers in the locomotive and rolling stock industry are exposed to the highest risk of not receiving a living wage for regular working hours. Yet, due to the current economic downturn in the industry, payment components beyond position or base wages are under review for all employee groups. The following section will show that wage cuts have led to a situation where an increasing number of staff face severe income insecurity and a potential drop below the living wage benchmark.

3.5.2 Wage deductions

“I really want to love my job, and I want to work hard. However, for four or five consecutive years, wages have been deducted - initially RMB 300 and recently RMB 1400. Workers’ bonus payments are not enough to cover these deductions! [...] Are we here to work to make money, or to give subsidies to the state? [...] Is it necessary to push the employees to the point where they can’t bear it [74]?”

“Computer subsidies, overtime pay, and trainee performance pay – all is cancelled. How is it possible that the company still operates [75]?”

Workers in the locomotive and rolling stock industry must deal with a high level of uncertainty in terms of wage payments and employment as managers attempt to lay the burden of financial restructuring on employees [76]. Workers write about general wage cuts [77]. Wage cuts are significant – up to 50% [78]. Many employees are exposed to repeated wage cuts as companies do not receive enough orders [79]. An employee writes:

“I have experienced three salary cuts. I was promoted to a better position, but the salary still was cut in half compared to what I earned the first year when I became a full-time employee [80].”

Wage cuts do not only touch upon performance pay but also fixed wage components. For example, a worker writes that base wages were reduced by RMB 1350 (about € 170) [81]. Due to low base wages and various deductions, the overall wage situation for many employees is highly problematic. One worker states:

I work overtime for free, quarterly bonuses are only an additional RMB 1000 per month, it is unthinkable to take a vacation, the base wage is pitifully low, and you still have to deduct social insurance from it. What you get in the end is close to nothing – it’s really pointless [82].

Wage deductions may be realized through various rule amendments. Numerous workers report that overtime pay and performance pay were cancelled [83] [84]. Another worker writes that overtime pay would be cancelled but compensated for with performance pay [85]. And yet another worker states that the triple rate for overtime during red days was cancelled [86]. A worker complains:

“Regular workers don’t get overtime pay and are forced to clock in after 10 pm. During the internship period there is no performance pay and graduates only earn a base wage. In case they have full attendance, they’ll get overtime pay for four days (regulars don’t). The take-home wage for regular workers in the end is less than RMB 5000 [87].”

Workers have to accept deductions when they ask for a day off [88]. Five days of vacation trigger a 30% wage deduction and all bonus payments get cancelled [89]. Workers write that they must work long hours. If they don't manage to finish their tasks there will be wage deductions [90]. Wage deductions are not communicated and there is a general lack of transparency:

“The salary has been reduced during holidays, and there are rumors about the reduction of bonuses, but we will not know until the end of the year [91].”

“It's only been a month since the new policy came out. Anyway, I didn't know until I got my salary this month. I asked our finance and production managers, and they told me [92].”

New employees are deceived as they are not informed in a timely manner about wage cuts. In this context, a worker writes that the human resources department did not inform about pay reductions and instead referred to previous base wages [93]. It is hard for workers to understand wage calculations because they do not receive sufficient information and documentation. For example, an employee complains that pay slips are issued irregularly, that they lack dates and that there are no explanations of how deductions came about [94]. A worker at another factory reports on a similar phenomenon as he wonders why wage slips were issued every month in the past but now only irregularly [95].

3.5.3 Wage arrears

Workers have the right to receive their wages in full and on time. According to Chinese labour regulations, a wage payment interval may be fixed in an employment contract, but it must not exceed one month. Social media posts within the frame of this investigation show that these basic principles are not guaranteed. Workers write that factories delay wage payments as a financial threat to those who want to leave. They also write that their employer pays wages on the 20th of the second month [96]. Other workers state that employers keep at least one month of wages as a deposit [97] [98] [99].

The current economic downturn increases the risk of wage arrears. A worker writes:

“Nobody knows what payment they will cancel next year. The new generation first must get rid of the older workers. They can only earn what the older workers give up. Currently it is common that wages are not paid for two or three months [100].”

“We got our wages for January and February today. We had to borrow money to have something to spend [101].” (The worker writes this in July 2022)

Another worker writes that he started to work in July and received his first wage payment in late September [102]. And yet another worker states: *The company withholds our wages. Once you become a regular the wage is even lower. Many have walked away [103].*

3.5.4 Trend analysis

Mentions of deductions and wage arrears are fluctuating seasonally and show a stable long-term trend. Thus, the overall risk related to wage theft has not changed during the decade. Yet there are two phases when wage theft gained relatively more attention. The first episode emerged out of the merger of China Southern Railway and China Northern Railway into China Railway and Rolling Stock Corporation in June 2015. Due to the organisational restructuring, wages became a major discussion topic. The second episode began in early 2020 and is a result of managers' attempt to hand down financial pressure to the employees. The mean of mentions is about 2% per month for both periods (2013-2019 and 2020-2022). There is no statistically significant trend shift (appendix III.E)

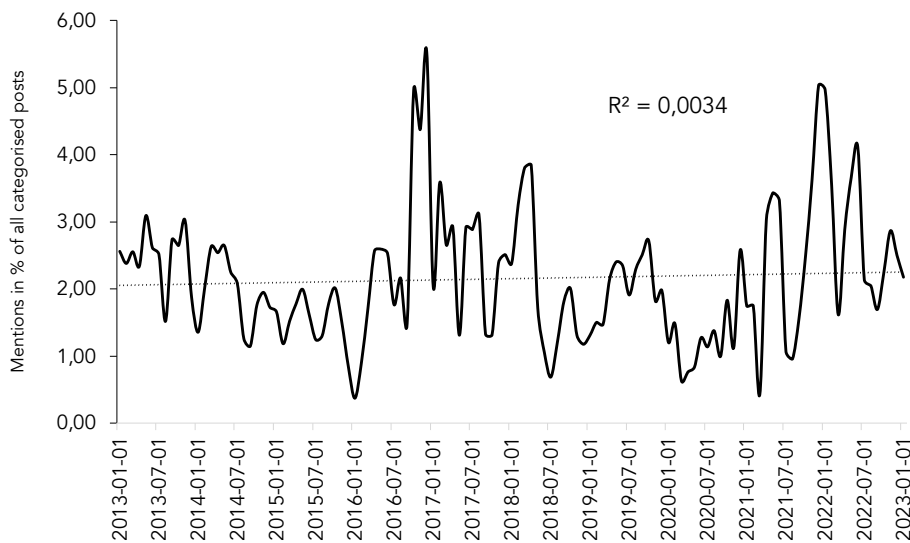


Figure 11: Mentions of wage deductions and arrears as a share of all categorised posts by month.

3.6 CAT 6: Contracts and human resources

Risk: Dispatch and outsourcing contracts increase economic insecurity and facilitate discrimination.

Scale: High; **Scope:** Medium; **Irremediability:** Medium

Trend: Continuous with seasonal fluctuation

Trend change: No significant shift

Salience: High

3.6.1 Labour agents and recruitment fees

The Law on Promotion of Employment (2008) regulates employment services, including labour agents and intermediaries. Under this law, a job intermediary may not provide false employment information, take away a worker's resident identity card, or take a deposit from the worker. The principle of truthful information, however, is frequently violated when workers

seek employment through labour agents. Workers write that labour agents exaggerate benefits. For example, an agent told a job seeker that he could earn RMB 11000-13000 (about € 1400 – 1660) per month. When he asked around he learned that long-term workers earned about RMB 8000 (about € 1000) while new recruits could not exceed RMB 7000 (about € 890) [104]. Because labour agents deceive job seekers, they reach out to workers in social media to triangulate information [105] [106] or to ask how to contact reliable agents [107], [108].

Landing a job in the locomotive and rolling stock industry can be expensive. As a principle, workers should not pay any fees as part of the recruitment process to employers or agents. Many brands and industry associations have made a commitment to no recruitment fees, including the Responsible Business Alliance and the Fair Labour Association. The ILO defines recruitment fees and related costs as: “*all fees, charges, expenses or financial obligations incurred in the recruitment process in order for workers to secure employment, regardless of the manner, timing or location of their imposition or collection.*”²⁵

These include:

- *Payments for recruitment services offered by labour recruiters*
- *Payments made by workers during direct hire by employers*
- *Costs for obligatory medical tests*
- *Costs for skills and qualifications tests and training*
- *Costs for travel*
- *Costs for introduction and orientation programmes*
- *Other administrative costs*

In violation of this principle, recruitment through labour agents involves costs and fees. For example, a job seeker engages in a discussion with workers on social media to triangulate information. He states that he needs to find out whether the job is worth it as the agent charges a fee of RMB 12000 (about € 1530) [109]. A worker reports that job seekers must spend more than RMB 20000 (about € 2550) to get a permanent position. The same work can be acquired for lower fees but then only as dispatched labour [110]. Another worker states that one has to pay RMB 60000 (about € 7660) for a permanent position [111]. Other posts confirm that intermediary fees can be indeed very high [112]. There are also posts from job seekers inquiring about labour agent costs, which is another indication that recruitment fees have become a common issue [113].

Besides agent fees, recruitment incurs additional costs. Some job candidates have to pay an introduction fee of RMB 400 (about € 50) [114]. Workers must also pay for medical examinations. The recruitment process takes several days during which job candidates must bear all costs such as food by themselves. If they do not work for at least seven days during recruitment, they will not get paid [104]. When Covid-19 restrictions still applied, workers also had to stay at hotels for several days before recruitment began and wait for test results. When they were cleared, they got relocated to factory dorms. These extended recruitment periods imposed additional costs on workers.

3.6.2 Labour dispatch and outsourcing contracts

Besides direct employment, manufacturers in China use labour dispatch and outsourcing services. A **labour dispatch contract** establishes an employment relationship between the labour agency and a worker. This contract is subject to Chinese labour legislation and in particular the Chinese Labour Contract Law. In addition, there is an agreement between the labour agent and the manufacturer to which the worker is sent. This contract is governed by the Chinese contract law. As a result, the manufacturer bears no legal responsibility for the employment contract. Yet the manufacturer is still responsible for working conditions in the factory. **Labour outsourcing** increases the distance between the manufacturer and the worker. In this case, all human resources-related issues are managed by the labour agent. The manufacturer defines only work tasks, the time frame, and the price for performing the work. The agent manages workers' wages, working hours, social insurance, and potential bonus payments. Hence, an outsourced worker does not appear in the manufacturer's human resources documentation. Our data indicate that labour dispatch and outsourcing violate two legal principles: (1) restrictive use of indirect employment contracts, and (2) equal pay for equal work.

(1) Legal constraints on the use of indirect employment

The Labour Contract Law, and the Interim Regulations on Labour Dispatch (2014) limit the percentage of dispatched workers in a company to 10%. The Regulations also restrict positions allowed for dispatched staff to three categories: temporary, auxiliary, and replacement. Temporary staff can work for a term of no more than 6 months at one company. Employment practices in the locomotive and rolling stock industry ignore these legal requirements. Workers write that due to the volatile financial situation, many factories use only dispatched labour [115] [116]. Other workers write that almost all new recruits have to sign contracts for dispatched labour [117] or that the first year of employment is always based on a labour dispatch contract [118].

Employment contracts for newly recruited students are frequently facilitated through labour dispatch or outsourcing. One student complains that last year's batch was recruited as regular workers while this year all recruits had to enter as dispatched workers [119]. Another worker informs in social media that current recruitment practices admit undergraduates from lower ranking schools only as dispatched labour [120]. Some students are offered three-party agreements with labour outsourcing agencies [121]. A student writes that he was supposed to sign a three-party contract. But because there were too many students he was given the option to either not get a contract or sign a labour outsourcing contract [122].

Even student interns are recruited as labour dispatch or outsourced workers [123] [124] [125]. A vocational school student stated that he works as an intern and signed a four year outsourcing contract [126]. A student worker explains that he signed a three year contract and the HR department told him that his employment would be dispatch in the beginning [127]. Apparently, students are informed that labour dispatch contracts are used for probation [128] and can be converted after two years [129]. Contract conversion, however, requires that the student's performance be rated A in two consecutive years [130]. Furthermore, contract conversions are a competitive process. A worker explains:

“Don’t think of becoming an employee. They have even stopped to recruit labour dispatch workers! It takes many years to transition from outsourcing to labour dispatch and then to regular employment. There are hundreds or even thousands of outsourced workers who compete each year for a few labour dispatch contracts. And the wages are still very low – about RMB 20 per hour [131].”

(2) Equal pay for equal work

The Chinese Labour Law stipulates the principle of equal pay for equal work in Art. 46. Furthermore, the Chinese Labour Contract Law requires explicitly that labour dispatch workers receive the same pay as employees directly hired and working in the same positions. In addition, the same labour remuneration system must be used for dispatched and directly hired employees based on the principle of equal pay for equal work.

Treatment of workers, however, is unequal depending on the type of contract. A worker writes that the factory differentiates between regular workers, labour service workers, and temporary workers [132]. Workers state that dispatched and outsourced workers earn lower wages [133] [131]. A worker claims that he is employed through an outsourcing agency and earns half the wage of a regular worker [134]. Another worker writes that outsourced workers frequently work extra hours but do not earn overtime fees. Instead, wages are calculated per diem and there is no social insurance [135]. A worker who has been working on an outsourcing contract for twelve years writes:

“Temporary workers have been treated equally with regular workers since the beginning, and now they are treated differently. Regular workers get off to eat half an hour earlier and rest half an hour more. Workers of outsourcing companies have to wait. When employees of outsourcing companies are late and arrive after 8 o’clock they must wait at the door until 9 o’clock to enter. Regular workers, however, can enter by swiping their cards [...] If you have an access control card, you are not allowed to enter either. If you swipe your card to enter, you will directly get deducted RMB 2,000 [136].”

Labour dispatch workers are not eligible for benefits such as the housing provident fund [137] [138]. Apparently neither dispatched workers [139] nor outsourced workers are eligible for performance pay [140]. And labour dispatch workers are the first to miss out on overtime work when the factory is not busy. Under these circumstances, many dispatched workers are forced to leave as they do not earn enough money to make a living [141]. Other posts corroborate the same situation for outsourced workers [142] [143].

3.6.3 Trend analysis

Labour intermediaries, dispatch labour, and labour outsourcing have become major topics since the merger of China Southern Railway and China Northern Railway into China Railway and Rolling Stock Corporation. The reorganisation of the state-owned sector in combination with declining demand led to a strategic shift from direct employment towards labour dispatch and outsourcing. During the past decade, mentions of different employment contracts regularly rise after Chinese New Year. During the Covid-19 outbreak, discussions

have been on a slightly lower level, but the general trend has remained stable. The average monthly share posts mentioning labour agents, dispatched labour, or labour outsourcing is approximately 5 % for both periods (2013-2019 and 2020-2022). There is no statistically significant trend change (appendix III.F).

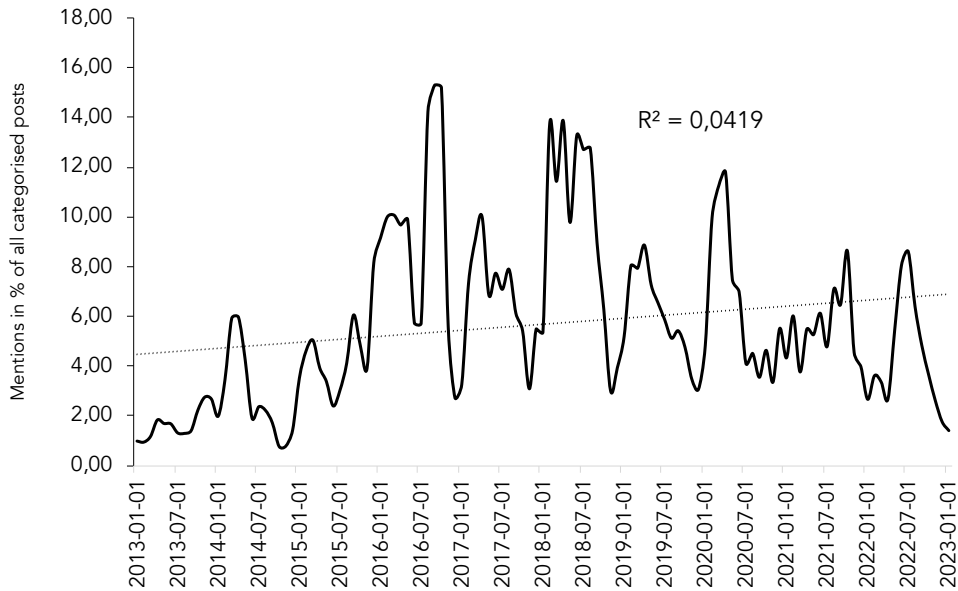


Figure 12: Mentions of labour agents, dispatch labour, and labour outsourcing.

3.7 CAT 7: Occupational safety and health

Risk: Exposure to physical and psychological health risks as a result of exhausting working conditions.

Scale: Very high; **Scope:** High; **Irremediability:** Very high

Trend: Declining with seasonal fluctuations

Trend change: Statistically significant shift since 2019

Salience: Very high

Many human and labour rights violations have a documented negative effect on health outcomes. For example, weak legal protection and repression of independent labour unions contribute to exploitative practices such as excessive working hours, verbal abuse, and harassment. In addition, low wages are an obstacle to accessing health services and increase stress and trauma. Therefore, the causes for health problems are not always discernible through an immediate assessment of the work environment. Nevertheless, information about physical and mental issues is important to evaluate overall negative effects on worker wellbeing.

Academic research finds that workers in export manufacturing are often exposed to an unhealthy workplace environment, short breaks, and chemical hazards such as dust, smoke,

mist, fumes, dusty raw materials, and toxic materials.²⁶ Workers' health is also jeopardised as a result of psychological factors.²⁷ Psychological risk areas are work stress, work-associated demands (i.e. long working hours, worries about mistakes, time pressure, exposure to abusive language and emotional abuse, and physical demand), and work-related values (i.e. lack of freedom at work, lack of job promotion prospects, part-time work, and job insecurity). Practices within these risk areas contribute to poverty and intake of low-nutritional food, both being factors that are associated with poor health outcomes. Other factors impacting workers' health and safety are human rights violations, in particular wage theft and lack of living wages.²⁸

3.7.1 Exhausting work and lack of social protection

Employees in the locomotive and rolling stock industry frequently complain about work pressure and stress [145] [146] [146]. A management notice to workers, for example, states:

“We must rigorously enforce an employee resignation system that compels the least performing workers to leave. In line with laws and regulations, we must establish dismissal procedures and promote the principle ‘where workers can get in, workers can get out’ [147].”

Workers write that financial stress increases work pressure:

“There is an endless amount of work and no holidays. The most irritating thing is that you have to work when you go home during the Chinese New Year. Can you imagine that after the New Year's Eve dinner, other people spend time with your family while you can only stay in the room to catch up with the work progress? We work the most overtime but get the least money. The office doesn't work overtime on weekends, but they get paid more than us. Our leader said that if we work hard, we may come back next year. Phew, that's disgusting [148].”

“When I'm on the job, I work straight from 8 in the morning to 7 in the evening. I am still criticized for not keeping up. Work intensity is extremely high, and you must engage in useless online class trainings, solve questions, and eventually work a whole month without a break [149].”

“I just graduated and have been working for three months without taking a day off. I haven't got my salary. The company pays only a base wage of RMB 4000. They treat you like a beast! [150].”

And even students face significant work pressure. An intern writes:

“I went to work at 8:00 am every day, and it was a blessing to be able to get off work at 8:00 pm. I often didn't get off work until after 10:00 pm. I never had any weekends or holidays. The exploitation of people was simply outrageous [151].”

Work pressure and evaluation schemes fuel conflicts between workers:

“We work overtime every day and all weekend. What counts as working hours depends on performance. Peer performance reviews create all kinds of quarrels among workers. Everybody believes to be your superior and leaders use you as a scapegoat. In this work environment you'll get brain-washed. Turnover rate is super high [152].”

Workers do not dare to resist the immense pressure they are exposed to:

“I don’t have the heart to look ahead. People get fired everywhere. Superiors don’t care about employees. If you complain you lose your job. There are only two choices obey or leave. There is no sense of security. Those with core technological competences still can switch jobs. Other positions, however, are hard to find [154].”

High work intensity and lack of rest increase the risk of accidents. In this context, an employee reports the story of a worker who was forced by the factory management to work two months without a single day off. He worked in a fast-paced environment and got severely injured when a robotic arm pressed him to the work platform. The company did not pay out insurance premiums even after several rounds of mediation. The company then threatened the worker to either withdraw his complaint or get fired. One week later, after he was informed about his dismissal, he experienced a mental breakdown. The worker was hospitalised for 15 days and had to pay a medical bill of RMB 20000 (about € 2550). The post goes on to say that it is common not to grant workers vacations and to threaten them. In conclusion, the post states:

“Workers should organize a big union, a big strike, and shout the slogan “I want to rest, I want to be healthy, I want to live, and I want human rights [155].”

But it is not only the uncooperative attitude of factory managers that compromise employees’ right to compensation. Sometimes workers simply do not know that they have no accident insurance at all. This risk is particularly high for workers with outsourcing or dispatch contracts. For example, a post reports on a worker who lost his eyesight because of a work accident. However, the worker was employed by a subcontractor, who hadn’t paid for an accident insurance [156].

Work life is stressful, as breaks are short and lines for food are long. A worker writes that this has led to the phenomenon of “running into line” [157]. Living conditions at factory dorms appear to be better compared to other industries. However, it is difficult to get a comprehensive understanding of the situation because employees rarely mention living conditions. A few workers posted pictures of their living situation that they consider to be good. Yet workers warn that conditions vary [158] [159]. A worker writes:

“It is true that the company provides accommodation, but the size of the two-person room is half the size of the four-person room in an ordinary university. The dormitory building is an old building from the 1970s and 1980s. The power limit is 300W. Water has been leaking for the past three months. At this point in time, Dalian has just started heating, but the dormitory is colder than outside [160].”

Workers write that living in the dorm is becoming increasingly expensive as more items such as water and electricity are no longer included in the rent [161][162][163][164]. Rising costs increase financial pressure and psychological stress.

3.7.2 Trend analysis

In the forums that we analysed, workers write mainly about exhaustion and tiredness because of long working hours and work pressure. In figure 14, we depict the relative frequency of workers' posts mentioning tiredness. The trendline shows that exhaustion has been an important topic throughout the past decade. Since the Covid-19 outbreak, however, there are less mentions of exhaustion. The average monthly mention rate declined from 3.6 % before 2020 to 2.5 %. This shift is statistically significant (appendix III.G). One possible explanation for this drop is workers' rising fear of becoming unemployed and not earning enough money. As a result, working hours are discussed in terms of pay rather than health. Mentions of exhaustion gradually rise each year in spring after the Chinese New Year and peak in summer and/or autumn.

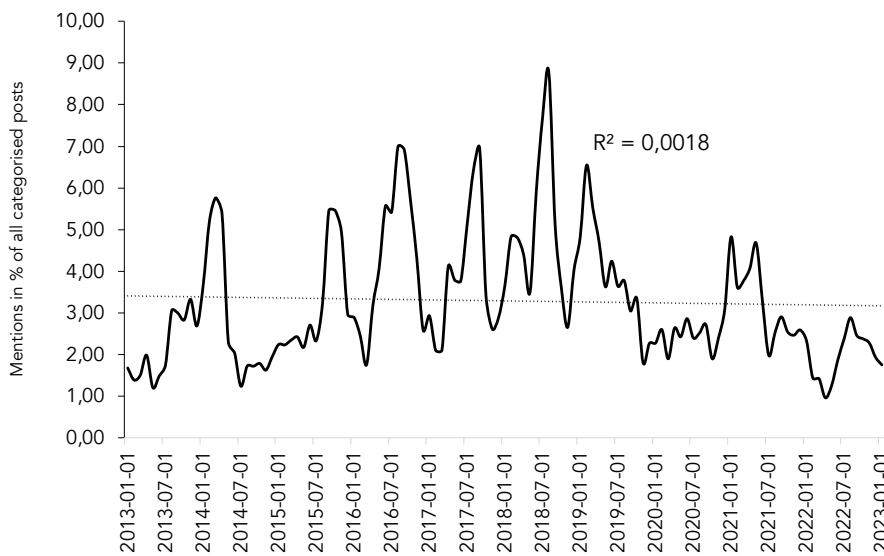


Figure 14: Mentions of health issues as a share of all categorised posts by month.

3.8 CAT 8: Working time

Risk: Workers work too many hours and/or do not get overtime premiums.

Scale: Very high; **Scope:** Very high; **Irremediability:** Moderate

Trend: Increasing and seasonally fluctuating

Trend change: Statistically significant shift after 2019

Saliency: Very high

Chinese labour regulations stipulate that an employee must not work more than 36 overtime hours per month and no more than three hours per day. Overtime during weekdays shall be paid 1.5 times the regular rate, two times during weekends, and thrice during national holidays. Employees must have one rest day each week.

Since overtime is relatively expensive and, at the same time, an important management tool to adapt to fluctuating orders, managers have strong financial incentives to undermine or circumvent regulations on overtime pay. Besides depriving employees of the pay they are legally entitled to, excessive overtime also exposes workers to health risks. Recent studies show that overtime increases the risk of respiratory diseases,²⁹ and contribute to low-intensity pain, which worsens physical and psychological health in the long run.³⁰ Overtime is also a major contributor to worker dissatisfaction.³¹

3.8.1 Overtime

“There is indeed a lot of overtime work. Working 8 am to 10 pm every day is normal. Weekends don’t make a difference; you have to work overtime [167].”

“If you are afraid of becoming exhausted, don’t come here. You have to work overtime until you die [168].”

“Every day we work overtime. At Kunshan we had not a vacation for a year [169].”

“You should not to get here. We work overtime every day until 11.30 [170].”

Pressure to work overtime varies between departments and position [171] [172] [173]. Workers complain that they have to work overtime daily [174] [175] [176]. Some workers state that they work excessive overtime hours and haven’t got a day off in months [177] [178]. Some departments, a worker reports, have to work at least 13 hours for two consecutive months, as otherwise, there will be financial penalties [179]. Workers report they perform 320-330 hours per month [180] some more than 360 hours [181]. A worker writes:

“The most outrageous thing for me is the training of fresh graduates. We are required to start early training at 6:30 in the morning, have lunch at 12:00 and start classes at 2:00. We return to the dormitory to rest at 9:30 in the evening. Some new employees continue to work overtime until 12:00 or even go to the company for a meeting at the request of the leader, otherwise money will be deducted. During the training period, we must obey superior management. Every course and even senior managers’ speeches will convey to us the concept of working overtime again and again [182].”

Excessive overtime is not always rewarded with higher income as many factories have cancelled overtime pay [183] [184] [185] [186] or restrict the number of hours that can be paid at overtime rates. Workers frequently mention a maximum of four days (32 hours) of overtime per month [187] [188] [189]. Others refer to one day for 8 days of work [190] [191]. Workers state that hours after 10.00 pm and work at night are not counted as overtime [192]. Sometimes overtime pay depends on full attendance or a minimum number of hours [87] [179]. Managers have discretionary power to cancel overtime rates [193]. For some employees, working hours are regularly 8.00 am – 10.00 pm or 7:30 am – 10.00 pm five or six days per week [194] [195] [148]. There are also many employees who have to work during weekends [90] [196]. In contrast to reports on excessive working hours, other employees complain that there is little possibility to work overtime [197] [198] [199] [200].

3.8.2 Trend analysis

Overtime has become an increasingly important issue for workers particularly since the Covid-19 outbreak. Similar to other labour issues, overtime mentions develop along the business cycle in the industry, with a gradual intensification of discussions after the Chinese New Year, and peaks in summer and/or autumn (figure 15). After the Covid-19 outbreak, this pattern was interrupted as overtime discussions continued to rise even in winter and early spring. The average share of posts mentioning overtime rose from approximately 4% before 2020 to more than 13 % since then. This trend shift is statistically significant (appendix III.E.).

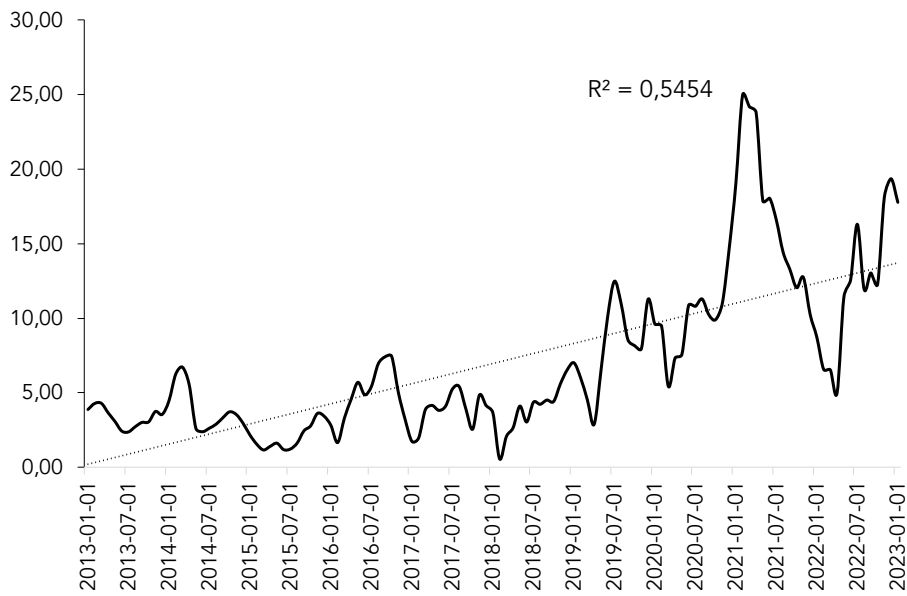


Figure 15: Mentions of overtime as a share of all categorised posts by month.

4. Conclusions

The locomotive and rolling stock industry in China is dominated by large-scale state-owned enterprises with some distinct features. A major difference between privately-owned export manufacturers and state-owned companies is the time horizon of employment. We found in previous studies that workers in the private sector shift between different employers and work seasonally. Data for this report, by contrast, indicates that workers in the state-owned sector hope for permanent employment. The reason for different attitudes is the distinct salary systems. In private companies, wages consist of two main components; base wage and performance pay (incl. overtime). State-owned enterprises offer in addition skill/seniority pay as a third component. Performance pay is relatively more important in the private sector and take-home wages can be comparatively high. This, however, depends on the speed in which the worker performs her/his duties and the number of overtime hours. When workers get older, they lack the strength to keep up with the expected pace and as a result, their wages drop. In state-owned enterprises, wages can rise over the years with skill attainment and seniority. These payments do not depend on overtime or piece rates. Thus, there is a trade-off for workers: Either earning relatively high wages for a limited period in the private sector or accepting lower wages in the state-owned sector with the prospect of stable employment and gradually rising income.

At a first glance, the employment that state-owned enterprises offer appears socially more sustainable. However, our analysis shows that also this labour regime comes with a host of rights violations and grievances. Our main findings are:

CHILD LABOUR RISKS THROUGH STUDENT INTERNS

Student internship programmes are frequently used to recruit workers in the locomotive and rolling stock industries. Some internships satisfy ILO criteria for forced labour, such as “abuse of vulnerability” and “deception”. In the case of students under the age of 18, exploitative internships constitute child labour. Students report receiving inaccurate or little information concerning their internship contract. There is no accountability for schools or recruiters to provide accurate information. Contracts are vaguely formulated and as a result, inadequately protect students’ rights and interests. If students want to cancel a contract, they must pay a penalty of RMB 5000 (about € 640). According to students, internships lack educational content and require them to perform factory work unrelated to their courses.

DISCRIMINATION

Job advertisements for employees in the locomotive and rolling stock sector are frequently based on discriminatory selection criteria. Almost all reviewed advertisements impose age limits, which is permitted under Chinese labour law but does not align with most codes of conduct that Chinese suppliers agree to. Appearance related criteria such as “no weird hairstyle” or “no visible tattoos” are another common discriminatory recruitment approach. Some jobs are open only for men or only for women and some advertisements rule out candidates from ethnic groups such as Uyghurs, Hui, and Zhuang. There are also instances where candidates have been selected based on their willingness to submit to rest days or overtime pay that are not commensurate with legal regulations.

FORCED LABOUR (STATE TOLERATED)

Many workers are prevented from resigning through practical obstacles, in accordance with the Chinese labour legislation. Often workers are not informed how to resign correctly. Res-

ignations require the signature of direct superiors. When the latter do not approve, workers are effectively prevented from leaving or forced to leave informally. Employees may also have to repay resettlement allowances or training fees if they resign within three to five years after starting.

FREEDOM OF ASSOCIATION

Workers in China do not have the right to organise independently. Instead, they must rely on the All-China Federation of Trade Unions (ACFTU), a mass organisation under the Chinese Communist Party. The ACFTU, however, rarely advocates workers' rights and interests. Main tasks of the ACFTU are ideological education, organisation of social events such as birthday condolences, and charity work. Despite severe political repression, workers occasionally dare to protest. But during the past decade under Xi Jinping, the average number of workers participating in protests has declined and grievances mainly touch upon legal rights and rarely refer to workers' interests beyond the legal minimum.

COMPENSATION

Full-time wages for workers at low seniority or skill levels miss living wage benchmarks by about 50 – 70%. As a result, this employee group is highly dependent on performance pay and overtime hours to earn a living. Workers with high skills or seniority receive position wages that are above living wage benchmarks. Yet, workers write that skill and seniority pay can vary monthly and can become halved with short notice. Due to the current economic decline of the locomotive and rolling stock sector, workers at all levels are exposed to ad hoc cost saving measures, such as cancelled overtime pay or delayed wage payment, which violates the workers' legal rights. Other wage cuts, such as reduced performance pay, are legally permitted but may result in total wages that are below a living wage.

CONTRACTS AND HUMAN RESOURCES

Receiving a regular employment contract in state-owned locomotive and rolling stock companies in China may come with fees ranging between RMB 10000 – 60000 (€ 1300 – 7700), which violates ILO principles that prohibit “all fees, charges, expenses or financial obligations incurred in the recruitment process in order for workers to secure employment, regardless of the manner, timing or location of their imposition or collection.” Besides regular employees, an increasing number of workers is hired through outsourcing and dispatched labour agents. In violation of the Chinese legislation, these worker groups may not receive equal pay for equal work, and working conditions may be worse.

OCCUPATIONAL SAFETY AND HEALTH

Workers write little about safety and health in social media. The most frequent complaint is work-related stress. Employees are under constant pressure to be faster and accomplish more. In addition, wage cuts in recent years have increased financial stress, forcing them to work long hours and compete for project-based employment contracts. Heavy, prolonged work pressure increases mental health risks as well as the risk for work related accidents.

WORKING TIME

Employees working in production-related positions are regularly forced to work excessive hours. Workers state that 13–14 hours are normal. But there are also reports of 320–360 overtime hours per month. Such extremes exceed the legal maximum by a factor of 10. Workers report that overtime pay is limited to a maximum of 32 hours. This limit may be reduced further as companies cancel overtime pay to save costs.

Many of the labour issues that we have identified in this report are in the grey zone. For example, exploitative practices related to labour contracts (internship, dispatch, outsourcing) violate the principle of “good faith”, which is difficult for workers to prove. The right to earn a living wage is difficult to enforce also because the Chinese labour law recognizes only minimum wages as a legal benchmark. But even blatant rights violations, such as excessive working hours or cancellation of overtime pay, is difficult to prove when extra working hours are not registered.

Due to labour repression, workers have little means to resist exploitation and unfair treatment in the grey zones. Our research shows that the Chinese labour union’s incentives and mandate to promote workers’ interests are limited and collective action is severely restricted. Since a nationwide crackdown on labour activists and lawyers in 2015, workers’ only hope have been labour bureaus and labour mediation and arbitration. Yet these institutions deal only with blatant rights violations and rely on employers’ willingness to cooperate.

Our research has some limitations. Firstly, our data reflects on issues that are widely shared among workers and that are not subject to systematic (self-)censorship. There are blind spots with respect to marginalized groups such as underage workers and politically repressed ethnic minorities who do not have a voice or are underrepresented in social media discussions. Furthermore, our data is insufficient to assess gender discrimination or stigmatized topics such as sexual violence and harassment. Finally, workers write little about occupational health and safety related issues. This is possibly because they do not consider it to be a relevant topic for peer discussion.

Secondly, we identify industry-specific labour issues. Our data does not provide enough detail for a site-specific or product-specific assessment. Still, the findings allow public buyers to formulate information requirements and contract clauses that move beyond standard protocols and instead promote a worker-centred risk assessment and remediation. The research method and insights, therefore, align with a human rights due diligence approach as proposed in the UN Guiding Principles on Business and Human Rights.

Appendix 1: Supplier forums

Forum
Alstom Tianjin
China Railway Shanhaiguan Bridge Group
CREG (General Forum 1)
CREG (General Forum 2)
CREG China Railway Construction Engineering
CREG Liuzhou Locomotive and Rolling Stock Works
CRRC (General Forum 1)
CRRC (General Forum 2)
CRRC Changchun Railway Vehicles
CRRC China Northern Railway
CRRC China Southern Railway
CRRC Datong Locomotive Works
CRRC Meishan Vehicle Factory
CRRC Nanche Luoyang Locomotive
CRRC Qingdao Sifang
CRRC Qiqihar Vehicle Factory
CRRC Shijaizhuang Vehicle Facotory
CRRC Tangshan Locomotive and Rolling Stock Works
KTK Group
Sany Group
Siemens

Appendix 2: Supplier list

Supplier
ABB
Annax
Atlas Copco
Axis
BFG
BNP
Bombardier Sifang Transportation and Lanp Electrical
Bombardier Sifang Transportation and Victall (GRP)
Bombardier Transportation Equipment (Suzhou) Co., Ltd (BTES)
Bombardier Transportation Matranovak (BTM)
Bonatrans
CAF
Changzhou Evergreen
Dellner,
EVAC
Fabricación Asientos Vehículos Industriales
Faiveley
Franz Kiel
Funkwerk
GHH
Grammer
Hoppecke
Hübner,
Icomera
IFE-Victall
IGW
JST
Knorr-Bremse
KTK
Lucchini
Merak-Jinxin
Metawell
Möve
Nanjing Kangni
Qingdao Yicheng
Richard
SAVAS
Schunk,
Secheron
SEMVAC

Shanghai Faiveley
Shijiazhuang King
Siemens
SKODA
Stemmann,
Strabag
Tsingdao Kampion
Victall
Victall-Dellner
Voith Turbo
Voith Turbo Scharfenberg
Wabtec-Faiveley
Wuxi Jinxin
Wuxi Wanli

Appendix 3: Descriptive statistics and t-tests

3.A Mentions of student interns

The mean weight of student interns has declined from 13.76% to 8.2% since the Covid-19 outbreak. Posting variance became lower, which suggests that seasonal differences are less pronounced. P-values (one and two-tail) are below 0.01, indicating that the measured trend change between the two periods is statistically significant (not by chance).

t-Test: Two-Sample Assuming Unequal Variances

Period	2013-2019	2020-2022
Mean	13.76	8.20
Variance	52.51	16.25
Observations	84	36
Df	110	
t Stat	5.44	
P(T<=t) one-tail	<0.01	
t Critical one-tail	1.66	
P(T<=t) two-tail	<0.01	
t Critical two-tail	1.98	

Table 3.A: Descriptive statistics and t-test for relative weight of student interns.

3.B Mentions of recruitment

Descriptive statistics in the table 3.B suggest that the average weight of recruitment-related discussions declined from 12.01% to 5.83% during the pandemic. Monthly posting weight variance (seasonal differences in mentions) decreased substantially, from 112 to 15. P-values for one- and two-tailed t-tests are below 0.01, confirming that the measured trend change since the pandemic is not by chance.

t-Test: Two-Sample Assuming Unequal Variances

Period	2013-2019	2020-2022
Mean	12.01	5.83
Variance	112.27	15.45
Observations	84	36
Df	116	
t Stat	4,6494	
P(T<=t) one-tail	<0.01	
t Critical one-tail	1,6581	
P(T<=t) two-tail	<0.01	
t Critical two-tail	1,9806	

Table 3.B: Descriptive statistics and t-test for relative weight of recruitment related issues.

3.C Mentions of resignation

Table 3.C shows that the mean weight of resignation-related issues increased from 2.66% before the pandemic to 4.13% after. The increased variance from 5.9 to 28.38 suggests a more erratic or seasonally distinct posting pattern. This trend change, however, is not statistically significant, that is, we cannot rule out that measured changes are by chance only. The trendlines for both recruitment and resignation seem to have shifted already in 2019 (see figure 5). We therefore ran a t-test comparing the periods of 2013-2018 and 2019-2020. Here we find a significant difference, which suggests that current employment risks in the locomotive and rolling stock industry may have got worse due to the pandemic, but the pandemic is not the main cause. Consequently, there is no reason to expect that employment-related labour rights violations will ease now that Covid-19 restrictions have been lifted.

t-Test: Two-Sample Assuming Unequal Variances

	2013-2019	2020-2022	2013-2018	2019-2022
Mean	2.66	4.13	2.30	4.31
Variance	5.90	28.38	3.78	24.53
Observations	84	36	72	48
Df	41		57	
t Stat	-1.58		-2.67	
P(T<=t) one-tail	>0.05		<0.01	
t critical one-tail	1.68		1.67	
P(T<=t) two-tail	>0.05		<0.01	
t critical two-tail	2.02		2.00	

Table 3.C: Descriptive statistics and t-test for relative weight of resignation related issues.

3.D Protest and protesters

Table 3.D reports on descriptive statistics and t-tests for the monthly number of collective action events and the monthly average number of protesters involved in these events. After Xi Jinping’s crackdown on labour movements and activists, the mean number of events decreased from 49 to 17 and the average number of protesters declined from 771 to 190. For both measures, the variance decreased dramatically as well. This development indicates that before 2016, there were relatively more exceptional episodes, i.e., periods with many protests and collective action events with a high number of participants. The low variance after the crackdown is another indication for systematic repression. The p-values for one- and two-tailed tests indicate that the trend shift for both measures is statistically significant.

t-Test: Two-Sample Assuming Unequal Variances

Period	2013-2015	2016-2022	2013-2015	2016-2022
Measure	No. of incidents		No. of protesters	
Mean	49.70	17.06	771.77	190.88
Variance	769.49	213.96	175384.86	23306.38
Observations	37	84	37	84
Df	45		39	
t Stat	6.76		8.10	
P(T<=t) one-tail	<0.01		<0.01	
t critical one-tail	1.68		1.68	
P(T<=t) two-tail	<0.01		<0.01	
t critical two-tail	2.01		2.02	

Table 3.D: Descriptive statistics and t-test for monthly protests and protesters.

3.E Mentions of wage deductions and wage arrears

Table 3.E depicts descriptive statistics and t-tests for wage deductions and arrears. The mean weight of these issues remained stable at around 2% for both periods. Seasonal fluctuations (variance) didn’t change much between the two periods. The continuous trend is also reflected in the statistically insignificant t-test corroboration.

t-Test: Two-Sample Assuming Unequal Variances

	2013-2019	2020-2022
Mean	2.12	2.18
Variance	2.96	4.17
Observations	84	36
Df	59	
t Stat	-0,17	
P(T<=t) one-tail	>0.05	
t Critical one-tail	1.67	
P(T<=t) two-tail	>0.05	
t Critical two-tail	2.00	

Table 3.E: Descriptive statistics and t-test for relative weight of wage deductions and arrears.

3.F Mentions of labour agents, dispatched labour, or labour outsourcing

The information in table 3.F corroborates that indirect employment contracts (dispatch and outsourcing) and labour intermediaries have been a major discussion topic throughout the past decade. The mean weight remained stable at around 5% during both periods and seasonal fluctuations (variance) narrowed marginally only. The t-test is insignificant, confirming that posting patterns remained stable throughout the two periods.

t-Test: Two-Sample Assuming Unequal Variances

	2013-2019	2020-2022
Mean	5,79	5,41
Variance	14,31	6,04
Observations	84	36
Df	102	
t Stat	0,66	
P(T<=t) one-tail	>0.05	
t Critical one-tail	1,66	
P(T<=t) two-tail	>0.05	
t Critical two-tail	1,98	

Table 3.F: Descriptive statistics and t-test for relative weight of labour agents, dispatched labour, and labour outsourcing.

3.G Mentions of health issues

The results in table 3.G indicate that there is a statistically significant trend shift after the Covid-19 outbreak as workers have been writing relatively little about tiredness in recent years. The observed shift, however, is comparatively small as the mean weight decreased from 3.6% to 2.5% and the variance narrowed from 7.01 to 2.64.

t-Test: Two-Sample Assuming Unequal Variances

	2013-2019	2020-2022
Mean	3,60	2,49
Variance	7,01	2,64
Observations	84	36
Df	106	
t Stat	2,84	
P(T<=t) one-tail	<0.01	
t Critical one-tail	1,66	
P(T<=t) two-tail	<0.01	
t Critical two-tail	1,98	

Table 3.G: Descriptive statistics and t-test for relative weight of health issues.

3.H Mentions of overtime

Table 3.H shows that overtime related issues are on the rise. The mean weight of this issue more than doubled since the Covid-19 outbreak and seasonal fluctuations increased by a factor of four. The trend shift between the two periods is statistically significant.

t-Test: Two-Sample Assuming Unequal Variances

	2013-2019	2020-2022
Mean	4.35	13.33
Variance	10.07	42.49
Observations	85	37
Df	44	
t Stat	-7.98	
P(T<=t) one-tail	<0.01	
t Critical one-tail	1.68	
P(T<=t) two-tail	<0.01	
t Critical two-tail	2.02	

Table 3.H: Descriptive statistics and t-test for relative weight of overtime.

STATE-IMPOSED FORCED LABOUR AT LOCOMOTIVE AND ROLLING STOCK SUPPLIERS IN CHINA

**A HUMAN RIGHTS DUE DILIGENCE ANALYSIS BASED
ON ONLINE DOCUMENTS AND SOCIAL MEDIA POSTS**

AUTHORS

Stefan Brehm and Helena Magnusson,
Globalworks Lund AB

FAST FIND

1. Forced labour in China	/ 68
1.1 Forced Labour Regime	/ 68
1.2 Targeted Poverty Alleviation	/ 70
1.3 Industrial Poverty Alleviation	/ 71
1.4 Vocational Training	/ 72
1.5 Fight Against Terrorism And Religious Extremism	/ 73
1.6 Spatial Distribution Of Forced Labour Risks	/ 74
2. Forced labour due diligence	/ 76
3. Method and data	/ 78
4. Findings	/ 79
4.1 Overview	/ 79
4.2 Detailed Findings	/ 81
5. Conclusions	/ 92

I. Forced labour in China

In 2015, President Xi Jinping announced that absolute poverty would be eradicated from China by the end of 2020.¹ He made this goal one of his signature policies requiring particular attention throughout the Communist Party and government organisations. Xi's poverty alleviation programme officially aims at ending with absolute poverty in ethnic minority areas through vocational training and promoting employment of surplus labour.

It is commendable to strive to eradicate poverty through higher-income work, but the implementation and actual results of poverty alleviation programmes in China often violate the human rights of the people targeted for these programmes. An example of forced labour can be found in a government report from Henan province. In the document, it is stated that “from the perspective of actual practice, it is difficult for some poor people to eliminate their lazy habits. Therefore, to increase income for poor families, the government must use ideological education to motivate them to participate in poverty alleviation workshops.”²

Coercive recruitment into wage labour, forced transfers to factories, abuse of vulnerability, and horrible working conditions have emerged as a major issue for labour intensive inputs in China's supply chains. Chinese corporations benefit from poverty alleviation because related programmes supply workers and financial support in sectors plagued by labour shortage and rising wages. Because poverty alleviation is mainly a political rather than social objective, programmes cannot be negotiated or moderated when targeted citizens do not wish to be included.

1.1 Forced labour regime

ILO Convention No. 29 defines forced labour as “all **work or service** which is exacted from any person under the **menace of any penalty** and for which the said person has **not** offered himself **voluntarily**.” To provide guidance on identifying forced labour situations, the ILO lists eleven indicators:³

- Abuse of vulnerability
- Deception
- Restriction of movement
- Isolation
- Physical and sexual violence
- Intimidation and threats
- Retention of identity documents
- Withholding of wages
- Debt bondage
- Abusive working and living conditions
- Excessive overtime

Sometimes the presence of one indicator is sufficient to conclude that a labour relationship is not voluntary, while in other cases, several indicators in combination are necessary. The ILO provides an e-learning tool⁴ and a handbook⁵ to support the identification of forced labour and promote appropriate action.

Forced labour risks in China are diverse. We therefore systematised forms of forced labour, as shown in Figure 1. In the context of export manufacturing in China, the menace of penalty can be divided into **state-tolerated and state-imposed** forms. State-tolerated forms refer to corporate management practices that abuse power asymmetries between employers and workers. These may include wage deductions or wage arrears, which are used as a punishment for not committing to overtime or unpaid extra working hours. Another common instance of state-tolerated forced labour are administrative barriers and financial penalties for workers who want to resign. We refer to these practices as state-tolerated forced labour because it is the private sector who initiates and implements them while state authorities support business interests with regulatory leeway and/or weak law enforcement. State-tolerated forced labour applies mainly to migrant workers and vocational school students. Since this form of forced labour is widespread and often formalised in enterprise regulations, victims are often not aware they have been subjected to forced labour.

Forms of state-imposed forced labour relate to practices that are state-organised or state-endorsed. The two most common forms under this category are industrial poverty alleviation programmes and vocational training agreements between schools and the private sector. State-imposed forced labour targets specific groups, in particular registered poor households and non-Han ethnic groups. These categories can overlap with groups subjected to state-tolerated forced labour. State-imposed forms can be further sub-divided into two modes of enforcement: economic coercion and existential threats. Economic coercion is used to leave targeted individuals with little choice but to accept state-imposed employment or vocational training. The menace of penalty in this context refers to measures such as cutting off poor farmers from social guarantees or withdrawing land use rights if they are unwilling to accept state-imposed wage labour. Existential threats refer to the deployment of detention, imprisonment, torture, or other forms of physical and psychological violence.

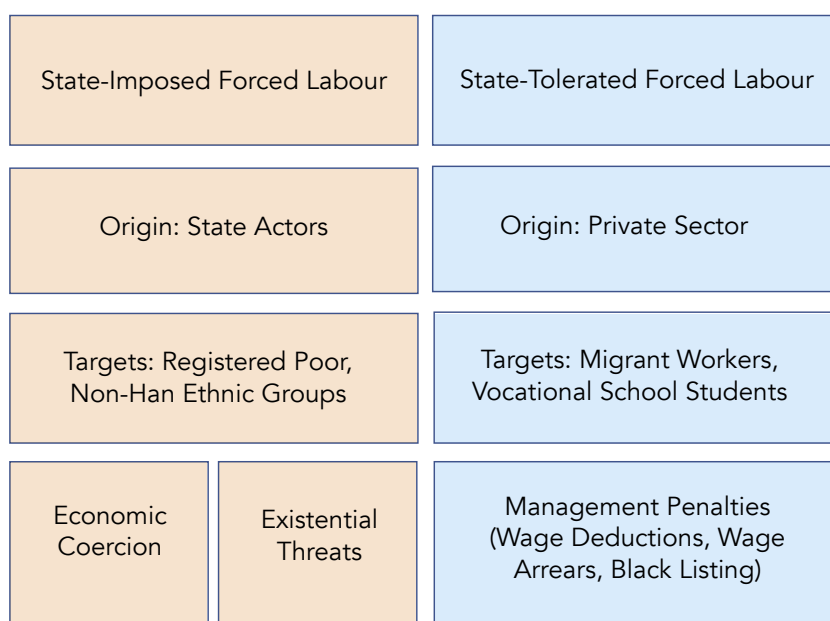


Figure 1: Globalworks' systematisation of the Chinese forced labour regime.

In this part of the report, we look at state-imposed forms of forced labour. The remainder of this chapter outlines two main frameworks for economic coercion: poverty alleviation and vocational education. In section “1.3 Fight against terrorism and extremism”, we explain how these frameworks are embedded into existential threats in the context of politically repressed ethnic groups, in particular Turkic and Tibetan ethnicities.

1.2 Targeted poverty alleviation

President Xi Jinping’s poverty alleviation programme officially aims at eradicating absolute poverty in ethnic minority areas through vocational training and promoting employment of surplus labour. In 2014, the Chinese Government officially adopted a Targeted Poverty Alleviation (TPA) as the main political strategy to get rid of poverty in western and Central China. The strategy is carried out by local CCP and government cadres. TPA has developed over the years and currently consists of three elements: Precise identification, tailored assistance, and effective management. Precise identification means that cadres must collect detailed information from rural households and identify those that should be registered as poor. Each poor household then receives a card for electronic storage of information such as family status, cause of poverty, income, and name of the cadre who is responsible for lifting the household out of poverty. The second element, tailored assistance, requires officials to identify the root causes of poverty and draw solutions according to each household’s need. Poverty mitigation measures may include subsidies, loans, re-location, temporary labour transfer or vocational training. Finally, effective management refers to thorough documentation and regular updating of a household’s status. This information is essential for cadres’ evaluation and career prospects.⁶

The risk of forced labour has increased steadily over the past years. The reason for this is a quota system governing poverty alleviation. Local cadres working in jurisdictions that are included in the “battle against poverty” face high pressure to fulfil quotas that determine the number of farmers to be transferred into wage labour each year. Academic research shows that cadres are highly motivated to use extreme measures.⁷ For example, a case study from a village in Shanxi province reports how local government officials sold agricultural land cultivated by impoverished farmers so that these would be forced to accept resettlement and work in a factory.⁸ Another study showed how villagers in Gansu province were coerced into resettlement and wage labour when the local government threatened to cut them off from basic state support. To ensure that the resettled farmers would not return, the local government revoked their local household registration and sold their land.⁹

Official statistics on poverty reduction and disposable income of registered poor show a linear trend that is in line with political targets and quotas (figure 2). This development strongly indicates that there is little margin for poor households to decide if, when, or how to participate in poverty alleviation programmes.

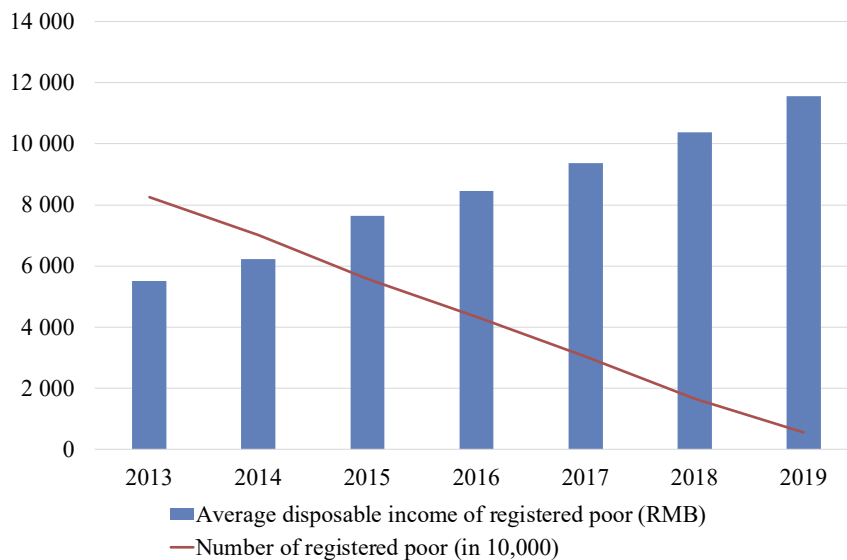


Figure 2: Official statistics on poverty alleviation progress (Source: National Bureau of Statistics of China).

1.3 Industrial poverty alleviation

Poor farmers and herdsmen are frequently subjected to industrial poverty alleviation programs. Participants are either employed at factories close to their homes, relocated to industrial areas within their home provinces, or transferred (temporarily or permanently) to factories in other provinces. Employers benefit from state-imposed transfer programs because they can assign these workers tasks and positions that are not popular among the regular work force. In addition, employers receive job stabilisation subsidies, which reduces labour costs.

1.3.1 Labour transfers

Labour transfers across provinces do not only entail the risk of forcing poor farmers and herdsmen into unwanted employment relationships but the new recruits may also fall victim to coercive practices once they enter the factory. With respect to the Yi minority, academic research suggests that stigmatisation makes it difficult for workers to find help when their labour rights are violated.¹⁰ What is more, labour dispatch agents may further complicate the situation for workers. When workers are supplied as dispatched labour, there will be no labour contract between the factory and the worker. Wages will be paid by the dispatch agent. In case wages are withheld or social insurance contributions are not paid, it will be difficult for the worker to determine whether it is the factory or the agency that is not compliant. Having been dispatched far from home implies yet another problem. It can be difficult for the workers to simply leave and go back home since they might lack the financial means to travel such a long distance.

1.3.2 Poverty alleviation workshops

When registered poor farmers and herdsmen are employed locally or in regions within their home province, they often end up in poverty alleviation workshops. These are small-scale factories operating as (informal) suppliers to larger companies. Poverty alleviation workshops entail a high risk of forced labour because they follow similar principles as the cross-provincial transfers. As a result, workers are frequently subjected to violations of their human rights and labour rights.¹¹ Many of these workshops operate at (invisible) lower tiers of global supply chains. By mid-2022, about 34,000 such workshops had been built in central and western China, employing around 433,000 members of formerly impoverished households. 4.33 million poor farmers and herdsmen were labouring in 35,000 resettlement sites.¹² The number of affected persons is probably much higher because not only working persons are resettled but often the entire household.

1.4 Vocational training

The Chinese private sector uses student interns as a major component to mitigate labour shortages and labour fluctuation. Vocational schools send their students to work in factories between three months and one year where they work full time and overtime schedules. These students often perform the same tasks as regular workers but are paid at a lower rate and denied judicial and other remedies for labour law abuses. Internships frequently lack educational, technical, or vocational content and instead facilitate labour exploitation. Employers and business-friendly local authorities promote self-interested collaboration agreements between vocational schools and factories, rendering students vulnerable to abuse since without completing an internship, they cannot graduate.¹³

There are currently around 15 million students enrolled in secondary vocational schools each year (figure 3). Even though the number of students declined during the past decade because of demographic changes and the pandemic, vocational students constitute a large group being exposed to state-imposed forms of forced labour.

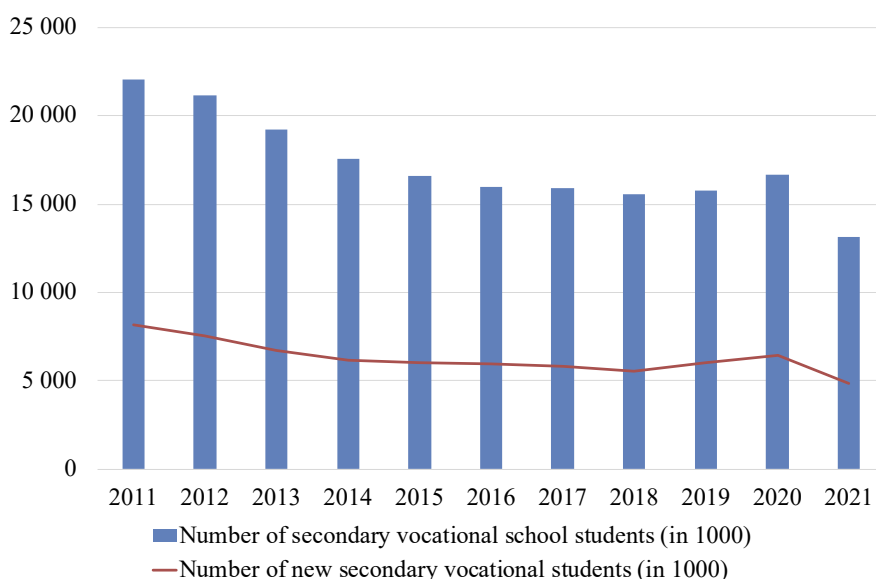


Figure 3: Vocational school students in China (Source: Statista).

1.4.1 Exploitative internships

Vocational school students are in a double-exploitative relationship where both the school and the factory try to take advantage of them. For example, factories may pay wages that are very low as minimum wage regulations do not apply to internships. Furthermore, the school or individual teachers have the power to withhold part of students' wages. Internships are financially lucrative for schools not only because they benefit from factory bonus payments and withheld wages but also because internships shorten the teaching terms, which decreases the school's running costs. Another factor endangering the pedagogical purpose of internships is students' ad hoc mobilisation to compensate for labour shortage. Students have little means to resist internship exploitation. When they complain about harsh working conditions or unlawful treatment, e.g., being forced to work overtime, it is not only the factory management that may put pressure on them but also schools can use threats and sanctions.¹⁴

1.4.2 State-imposed internships

Vocational schools are also part of the poverty alleviation regime in China. Children of registered poor households are encouraged to acquire skills through vocational training. In 2018, there were more than 60 000 students from poor families enrolled in secondary vocational schools. More than 90% came from rural areas.¹⁵ Vocational school students from impoverished families face multiple pressures, which entails a high risk of forced labour. Besides potential exploitation through schools and factories, they face additional surveillance from poverty alleviation cadres. Vocational education is couched in terms of escape from poverty with the slogan "one student being educated and obtaining a job, while the whole family gets lifted up and out of poverty."¹⁶ As a result, students are exposed to political and moral pressure to submit to the terms and conditions of internships and subsequent employment.

1.5 Fight against terrorism and religious extremism

In Xinjiang and increasingly also in Tibet, industrial poverty alleviation and vocational education have become part of the Chinese government's national unity policies. According to the government's white paper "Employment and Labour Rights in Xinjiang" dated September 2020, terrorists, separatists, and religious extremists in southern Xinjiang are a root cause of poverty as they "*incite the public to resist learning the standard spoken and written Chinese language, reject modern science, and refuse to improve their vocational skills, economic conditions, and the ability to better their own lives.*"¹⁷ Turkic ethnic groups are sent to "Vocational Education Training Centres" (VETC) and upon "graduation", transferred to factories in Xinjiang or other provinces. The Xinjiang report of the Office of the United Nations High Commissioner for Human Rights states:

“[T]he VETC system amounts to large-scale arbitrary deprivation of liberty through involuntary placements in residential facilities and compulsory “training”. Individuals in the system are, as a result, under a constant “menace of penalty”. For example, detainees in the VETC facilities told OHCHR they had to work within the VETC facilities as part of the “graduation process”, with no possibility of refusal for fear of being kept longer at the facilities. Moreover, provisions in the XUAR Regulation on De-extremification, and other laws, regulations and policies, impose de-radicalization duties on enterprises and trade unions, based on the law’s own expansive criteria of religious “extremism”.”¹⁸

Uyghurs and other ethnic groups in Xinjiang can also be sent directly, without “vocational education”, to factories as surplus labour. Xinjiang’s 13th Five Year Plan on Poverty Alleviation admits that labour transfers and employment are not voluntary as there is “insufficient willingness of the poor people to gain employment, making it difficult to transfer employment and increase income”.¹⁹ Implementation of the forced labour regime in Xinjiang and Tibet rests on the same system of delegated responsibilities as applied in other ethnic autonomous regions. Adrian Zenz, a leading scholar in the field of forced labour in Xinjiang and Tibet, cites official Chinese Government documents stating that the aim to eradicate poverty is commensurate with “military command” and requires that every administrative level imposes pressure on each successive lower level to “consolidate poverty alleviation responsibilities and increase the effectiveness of accountability”.²⁰

A significant difference between Xinjiang and other autonomous regions is the involvement of the Chinese military in the forced labour regime. A key actor in this context is the Xinjiang Production and Construction Corps (XPCC), which functions as a regional government, a paramilitary organization, and a large-scale corporate enterprise. The XPCC runs prisons, media outlets, schools, farms, enterprises, and mines in Xinjiang. A recent report from Sheffield Hallam University investigates the role of the XPCC and concludes that:

“[T]he XPCC is involved in a pervasive program of egregious rights violations that effect the most marginalized people in the Uyghur Region. The region, its people, and their identities are seen as critical security threats to China’s cultural integrity, the stability of the state’s borders, and the absolute authority of the CCP. In the last five years in particular, the XPCC has played a critical role in suppressing Uyghur life, culture, and identity through the following means: extra-judicial internment and imprisonment, land expropriation, forcible migration of people, repressive, pre-emptive policing, social engineering, religious persecution, forced labor.”²¹

1.6 Spatial distribution of forced labour risks

Resettlement with the aim to assume work in dedicated factories is not voluntary for registered poor. And while Uyghurs and Tibetans face the highest level of political repression, other non-Han ethnic groups still may be forced into vocational training and labour transfer programmes that are based on similar forms of abuse, military drill, and ideological schooling.

The average share of non-Han citizens in China is approximately 15%. They are, however, unequally distributed across the country. For example, in Jiangxi province 99.7% are Han Chinese. In Tibet by contrast, more than 90% of the population are of non-Han ethnic

origin. Figure 4 depicts the share of non-Han ethnic populations in percent. Colours are based on a continuous, linear interpolation where dark shades represent a high share of non-Han ethnic groups. The provinces with most non-Han citizens are Tibet, Xinjiang, Qinghai, Yunnan, Guizhou, Guangxi, and Ningxia. Other provinces with above-average non-Han population shares are Hainan, Inner Mongolia, and Liaoning.

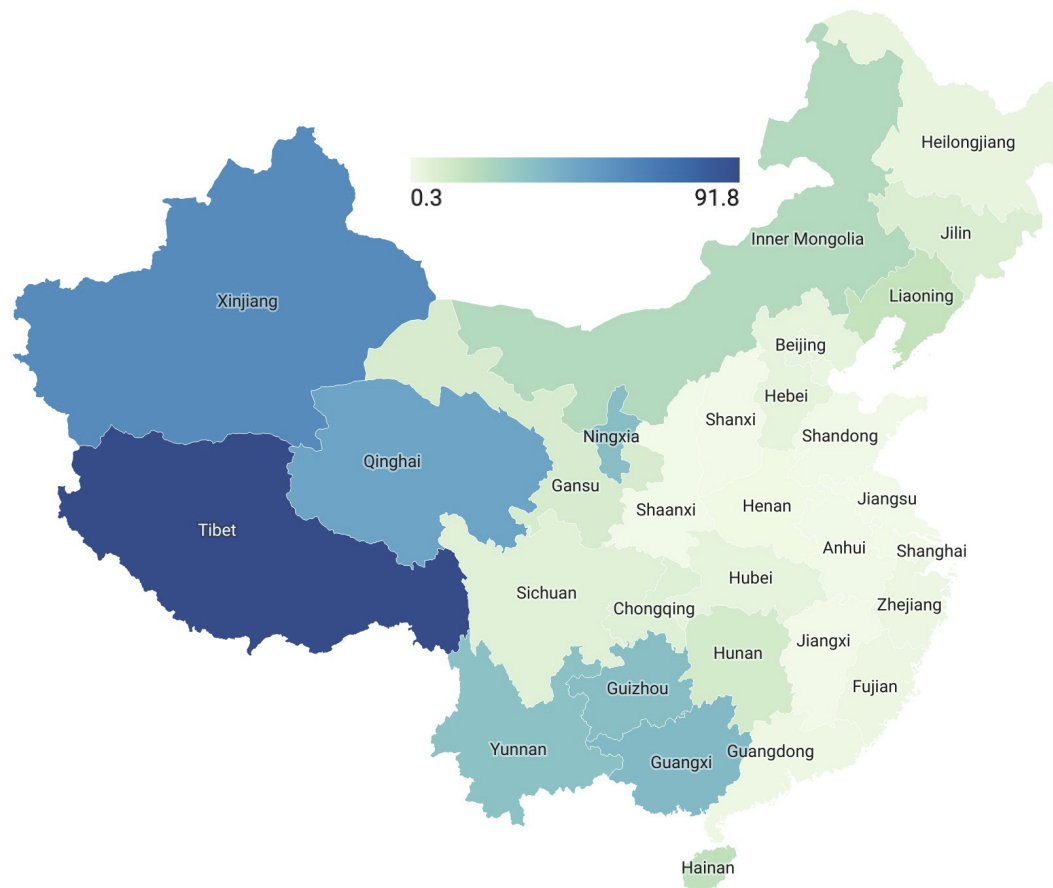


Figure 4: Regional distribution of non-Han ethnic minorities in China (measured in %) based on data from National Bureau of Statistics of China.

Forced labour through poverty alleviation programmes target autonomous regions, prefectures, and counties throughout China. In Xinjiang, Tibet, and some parts of Qinghai (Tibetan areas in the southwest of Qinghai), poverty alleviation and vocational education are intimately connected to state-repressive policies in the name of the Chinese Government's fight against terrorism and religious extremism. The risk of forced labour through existential threats and economic coercion is very high. Rights violations are embedded into a (local) totalitarian state apparatus. They are difficult to verify and, if discovered, non-negotiable. Areas where state-imposed forced labour mainly rests on economic coercive means are Yunnan, Guizhou, Guangxi, Ningxia, Inner Mongolia, Liaoning, and Hainan. The risk of state-imposed forced labour in these provinces is high.

2. Forced labour due diligence

Globalworks systematised salience related to the ILO definition of forced labour in a four-grade risk classification:

- **Moderately high risk:** All Chinese citizens registered as poor and all vocational school students participating in mandatory internships face a risk of being assigned to jobs against their will or being prevented from resigning in accordance with labour legislation.
- **Medium high risk:** The risk of abusing the vulnerability of economically marginalised citizens and students increases due to social stigmatisation and prejudices when they belong to ethnic minorities.
- **High risk:** Politically repressed minorities are frequently the target of poverty alleviation programmes and vocational training because these measures are considered essential for implementing political control and re-education. The combination of economic marginalization, social stigmatisation, and deprivation of political rights results in a high risk of forced labour.
- **Very high risk:** Uyghurs and other Turkic minorities in Xinjiang as well as Tibetans are subject to systematic political repression and coercive measures. Indicators of vulnerability are the same as those under “high risk”. Due to the scale and scope of coercive poverty alleviation measures and vocational training, the risk of becoming victim to forced labour practices increases to “very high”.

The responsibility to prevent and end forced labour involves not only Government authorities and legislative bodies but also multinational enterprises and other firms sourcing from countries where regulations to protect workers from forced labour are lacking or are not enforced. In this context, the UN Guiding Principles (UNGPs) on Business and Human Rights require enterprises to conduct regular Human Rights Due Diligence (HRDD). This refers to the process through which businesses can identify, prevent, mitigate, and account for how they address their actual and potential adverse human rights impacts. The UNGPs general framework is supplemented with specific documents such as the ILO’s 2014 Protocol to the Forced Labour Convention calling on Member States to “develop a national policy and plan of action for the effective and sustained suppression of forced or compulsory labour in consultation with employers’ and workers’ organizations.” The UN 2030 Agenda for Sustainable Development leveraged this call in 2015 as it demands under target 8.7 “accelerated action to eradicate forced labour, modern slavery, human trafficking and child labour”.

Section 13 of the United Nations Guiding Principles on Business and Human Rights stipulates that business enterprises shall:

- Avoid **causing or contributing** to adverse human rights impacts through their own activities and address such impacts when they occur.
- Seek to prevent or mitigate adverse human rights impacts that are **directly linked** to their operations, products, or services by their business relationships, even if they have not contributed to those impacts.

Enterprises causing or contributing to forced labour can face legal charges while being linked to forced labour through a business relationship has currently no legal implications. However, failure to identify forced labour risks can lead to sanctions [19]. As intended and progressively so, states are putting legislation in place to implement the national level system of justice as stated in the UNGPs. In France, for example, large corporations can be held legally accountable according to the 2017 Corporate Duty of Vigilance Law.²² In the UK, corporations have hitherto only risked reputational damage as the Home Office is prepared to name and shame businesses that are not compliant with the 2015 UK Modern Slavery Act (MSA).²³ But with the upcoming overhaul of the MSA with the Modern Slavery Bill, the legislation is turning far stricter and transgression of the regulations will lead to sanctions.

The distinction between causing or contributing on one hand, and being linked to adverse human rights impacts on the other, is relevant for public purchasing decisions given that the former constitute a criminal offense while the latter is a breach of contract. Art. 57 (4a) in combination with Art. 18(2) and Annex X of the Directive 2014/24/EU of the European Parliament and the Council on Public Procurement requires that public buyers exclude tenders from enterprises that are causing or contributing to forced labour.²⁴

When corporations cause/contribute to forced labour, public buyers need to assess whether the brand manufacturer can be excluded from the tendering process. If a brand manufacturer is found to be linked to forced labour, Commentaries to the UN Guiding Principles and the OECD Guidelines for Multinational Enterprises specify that appropriate action will depend on the degree of leverage that the company has over its business relationship:

- If the company has leverage to mitigate the adverse impact, it should exercise it, as would be required in the event that the company had contributed to the impact.
- If the company lacks leverage, it should try to increase it.
- If the company finds increasing its leverage impossible, it should consider terminating the relationship.²⁵

In this report, we divide corporations that cause/contribute through their own actions and those that are linked through business relationships along the lines of ownership:

- When corporations wholly or partly own the factories or production sites where we find forced labour, the corporations actively **cause/contribute** to the presence and occurrence of forced labour. Furthermore, corporations cause/contribute to forced labour when they collaborate with equity or joint-venture partners that are involved in the Chinese state-imposed forced labour regime AND the partners' business operations are complementary or similar to those of the corporation.
- When corporations buy products and services or otherwise link their operations to factories or production sites where we find forced labour, the corporations are **linked** to forced labour through their business relationships.

3. Method and data

3.1 Scope of this research

This report explores forced labour risks in the locomotive and rolling stock supply chain in China. Basis for the investigation are the manufacturers listed in appendix 1. In addition to these brands, we investigated major Chinese equity and joint-venture partners related to them. To this end, we used a company registration database and business reports to identify major shareholders and collaboration partners. Corporations linked to state-imposed forced labour receive risk grades based on an overall risk assessment (sections under each brand). Risk grades relate exclusively to the locomotive and rolling stock sector. However, the sections on “sources and explanations” (sections b under each brand) also include material on links to state-imposed forced labour in other business areas. This information is relevant to evaluate the effectiveness and credibility of a corporation’s human rights due diligence approach.

3.2 Data

Data for the analysis in this report come exclusively from publicly available Internet sources. No information was retrieved through onsite visits, interviews, or soliciting individuals or organisations.

We collected documents from WeChat (Weixin, a major social media platform in China) and conducted a general search through China’s largest search engine Baidu. For each query, we went through the 100 most relevant hits, i.e., pages 1 – 10 in search results. We used company names in combination with functional keywords such as “transfer” or “poverty alleviation” as well as in combination with regional keywords such as “Xinjiang” or specific jurisdictions that are known for participating in labour transfers. We limited our search to hits after 2015, i.e., the time after President Xi Jinping began to deploy labour transfers as means for poverty alleviation and political control.

Besides Chinese language sources, we refer to legal documents, academic articles, CSO reports, and English language newspaper articles to provide context, assess implications, and broaden the perspective.

3.3 Methodology

After identifying relevant sites to investigate, we searched for (Chinese language) government documents, reports, and news articles online. WeChat, government websites, and online news outlets are the main platforms for communicating publicly information on poverty alleviation and labour transfer schemes as well as national unity policies (which are often cited as the main framework for justifying political repression of targeted ethnic groups).

The analysis for this report was not automated. This means that we read all information and decided on its relevance based on our subject matter expertise and additional context research. We evaluated approximately 1500 government documents, articles, and reports. About 5% of these documents were relevant and informed the following analysis on supplier links to labour transfers and vocational training in the context of poverty alleviation programmes.

4. Findings

4.1 Overview

There are several channels through which Uyghur forced labour may enter the locomotive and rolling stock sector:

- CRRC operates an industrial zone for train production in Xinjiang. The company has ties to the Xinjiang Production and Construction Corps, a paramilitary enterprise. Voith Turbo and Alstom (Bombardier) have established joint ventures with CRRC and are therefore linked to state-imposed forced labour in Xinjiang. Knorr-Bremse is linked to CRRC through supplier relations. We found information that these business relations may be linked to CRRC's business operations in Xinjiang.
- KTK Group has acquired Uyghur workers through state-imposed labour transfers. Previous investigations conducted by the Australian Strategic Policy Institute showed that Siemens, CRRC, and Alstom (Bombardier) maintain business relations with KTK Group and, as a result, are linked to Uyghur forced labour.
- Secheron and Siemens are joint-venture partners of Daqo. The latter's parent company is Xinjiang Daqo New Energy, which is banned from the US market due to its involvement in Uyghur forced labour. Complementarity between Daqo's operations in Xinjiang and products manufactured in the joint ventures with Secheron and Siemens suggest that the latter two corporations are linked to or contribute to state-imposed forced labour in Xinjiang.

Several corporations are also involved in industrial poverty alleviation programs targeting non-Han ethnic groups in western China:

- CRRC has received workers from Gansu province and Guangxi autonomous region through labour transfers. CRRC also established poverty alleviation workshops in Hunan province and Gansu province. As a result, CRRC's respective joint venture partners Voith Turbo and Alstom (Bombardier) are linked to forced labour risks in ethnic minority areas.
- Local governments in Gansu province have transferred poor workers to Victall. Furthermore, the company has benefitted from student interns from poor households through a collaboration agreement with a vocational school in Shandong.
- Grammer has actively participated in CRRC's industrial poverty alleviation programme in Gansu province. This program includes labour transfers and worker relocation to poverty alleviation workshops.
- KTK Group has participated in labour transfers of poor workers from Shaanxi. In addition, the company has received student interns from poor families.

None of the investigated corporations mentioned forced labour risks in China or links to Xinjiang in their respective sustainability / ESG reports. The gap between our findings and corporate reporting highlights the urgent need for stricter requirements on transparency and accountability.²⁶ Figure 5 provides a geographical overview of our findings. The links depicted on the map relate only to the locomotive and rolling stock sector and do not include other risk information that is relevant for evaluating the overall effectiveness and credibility of a corporation's human rights due diligence.

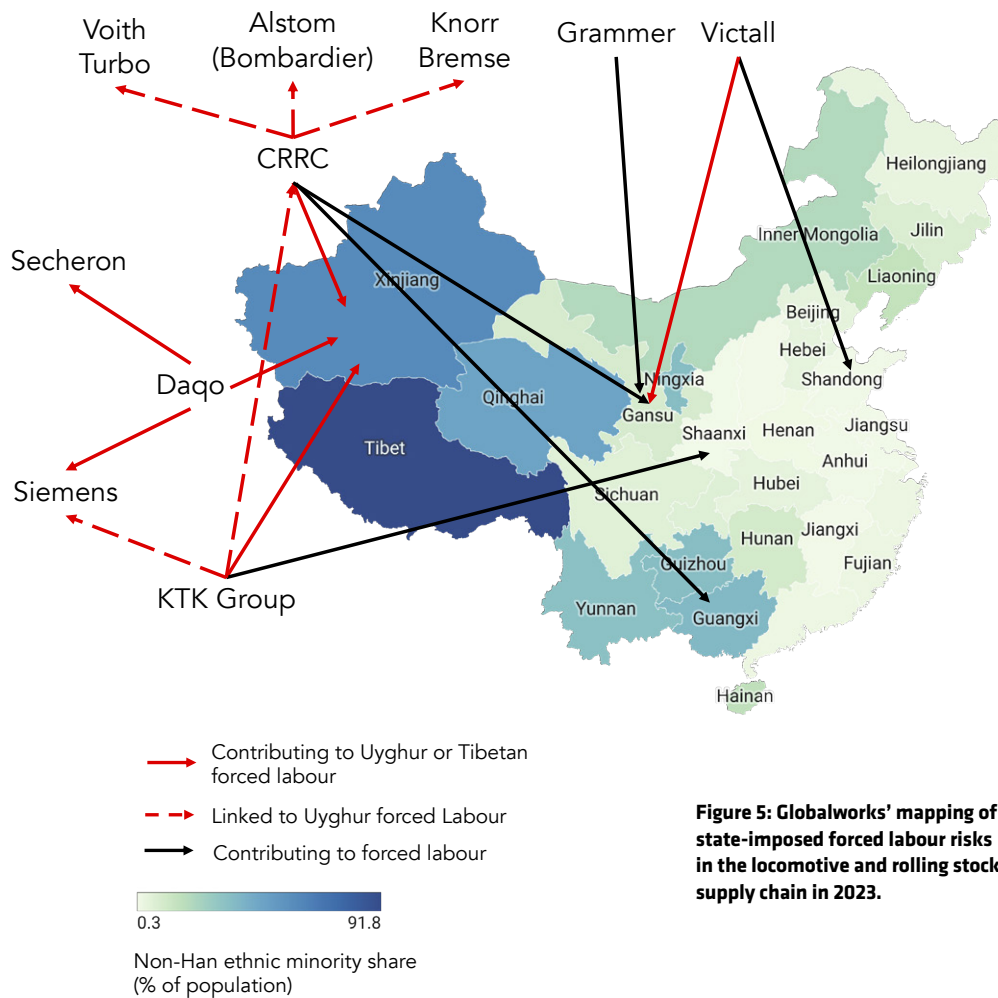


Figure 5: Globalworks' mapping of state-imposed forced labour risks in the locomotive and rolling stock supply chain in 2023.

How to read this map: Arrows between companies illustrate the flow of forced labour risks within the supply chain. Arrows between companies and geographical regions show where forced labour risks are located. Arrows can be solid or dotted. Solid arrows represent a causing/contributing relationship and dotted lines indicate that a company is linked to an adverse human rights impact. Finally, arrows can be red or black. Red stands for human rights violations related to Uyghurs or Tibetans and black signifies risks of state-imposed forced labour of other non-Han ethnic groups.

Example: Victall is involved in labour transfers of farmers and herdsmen from Gansu and state-organised vocational training in Shandong. Hence, there are solid arrows pointing from Victall to Gansu and Shandong. Labour transfers to Gansu include Tibetan autonomous villages. Therefore, the arrow representing this relationship is red.

4.2 Detailed findings

In this section we present the documents that shine light on forced labour risks related to corporations in the locomotive and rolling stock sector. The analysis refers to state-imposed forms of forced labour (see section I.1).

4.2.1 China Railway and Rolling Stock Corporation (CRRC)

SALIENCE: VERY HIGH
LEVERAGE: CAUSING/CONTRIBUTING

a. Overall risk assessment

CRRC constitutes a major channel for forced labour in the locomotive and rolling stock supply chain. As a state-owned company, CRRC represents an important gateway for foreign corporations to enter the Chinese railway market. Voith and Alstom (Bombardier), both operate joint ventures with CRRC. In addition, CRRC is a strategic collaboration partner of Knorr-Bremse.

CRRC owns a train production facility in Xinjiang. The latter received job stabilisation subsidies, which indicates involvement in state-imposed labour transfers. Joint ideology studies with the Xinjiang Production and Construction Corps are another indication that CRRC is part of the forced labour regime in the region. CRRC may also be linked to Uyghur forced labour through its business relationship with KTK Group, which reportedly received Uyghur labourers through state-organised transfers. Beyond Xinjiang, CRRC receives registered poor farmers and herdsmen from minority areas through labour transfers. Furthermore, the company has established poverty alleviation workshops and procured from them.

b. Sources and explanations

UYGHUR FORCED LABOUR: There is a very high risk that CRRC is involved in the repression of Uyghurs. The company owns a large-scale industrial park for rail equipment manufacturing close to Urumqi in Xinjiang Uyghur autonomous region.²⁷

Furthermore, CRRC is involved in infrastructure development based on a long-term agreement with Urumqi Government.^{28,29} Public reports suggest that CRRC's presence in Xinjiang is related to the autonomous region's forced labour regime. For instance, a report from Hami Government in Xinjiang features CRRC New Energy Electric Co. Ltd., a wholly owned subsidiary of CRRC, receiving support services such as tax incentives and job stabilization subsidies.³⁰ In the context of Xinjiang, the latter are paid to companies receiving state-allocated Uyghur workers.

We also found an article reporting that high ranking CRRC managers, together with cadres from the Xinjiang Construction and Production Corps, participated in a conference to study ideology and political work in Shihezi, Xinjiang.³¹

Previous investigations conducted by the Australian Strategic Policy Institute show that CRRC may also be linked to Uyghur forced labour through its business relationship with KTK Group. The latter has reportedly received Uyghur labourers through state-organised transfers.³²

INDUSTRIAL POVERTY ALLEVIATION: As a state-owned corporation, CRRC serves as an agent of the Chinese Government and the Chinese Communist Party (CCP) with far-reaching duties to assist in policy implementation and promoting ideologically aligned business conduct. CRRC was assigned several partner regions where the company is expected to eradicate poverty. In this context CRRC collaborates with Gangu county in Gansu province as well as Jingxi city and Napo county in Guangxi autonomous region.³³

Labour transfers of registered poor farmers and herdsmen to CRRC factories is an integral part of these west-east partnerships. A report of Maji District in Gangu county dated April 2020, urges cadres to “*make every effort and export labour services to other regions.*” Cadres should “*actively mobilize the enthusiasm of the masses to go out to work.*” The report emphasizes the necessity to intensify labour transfers to CRRC production sites.³⁴

But not all labour transfers go directly to these sites. The company has established additional poverty alleviation workshops and sources products from them. In Xiangxi Tujia and Miao autonomous prefecture in Hunan province, for example, CRRC has built a poverty alleviation workshop producing embroidery. CRRC then obtains products from the workshop that are used for decoration in highspeed trains.³⁵ In Gangu county, CRRC acquires work uniforms from poverty alleviation workshops. The county runs 45 of such workshops which in total employ 2 778 people.³⁶

A report about CRRC’s Party work in Niuxingbao Village, Shanxi province, dated Feb. 2021 states that the company regularly holds themed Party days, reviews Party oaths, and facilitates discussions and exchanges around the goal of poverty alleviation.³⁷ CRRC is also dispatching cadres to the village and assigning them poor families that the cadres must lift out of poverty within a given time frame:

“The company’s party committee requires the cadres of paired assistance to sign a statement of responsibility and a letter of commitment for paired assistance with poor households to form a community for poverty alleviation.”

Previous academic research has shown that these kinds of contracts put pressure both on the cadres and the poor.³⁸ Consequently, signing up for labour transfer programmes cannot be considered voluntary.



Figure 6: CRRC organized villagers to clean the relocation apartments.

CRRC has also facilitated the relocation of an entire village into apartments near production sites. Usually, villagers receive new housing in exchange for their land, which means that there is no way of turning back to their traditional way of life and they become entirely dependent on the assigned workplaces. Villagers have no means to oppose relocation, which is another factor pressuring them to accept a labour transfer agreement. The report highlights the result of these various pressure strategies stating that all villagers “with labour capacity” have been transferred for employment.³⁹

4.2.2 Grammer

SALIENCE: HIGH
LEVERAGE: CAUSING/CONTRIBUTING

a. Overall risk assessment

Grammer is actively participating in state-imposed labour transfer schemes and receives poor farmers and herdsmen from Gansu province and Shaanxi province. These labour transfers entail a high risk of state-imposed forced labour because they may target ethnic Hui, who face increasing political repression in China.

Grammer is also linked to forced labour in Xinjiang through its joint venture partner Shaanxi Automobile. Most likely, this partnership is not related to the railway supply chain. However, it shows that Grammer lacks incentives to conduct the heightened human rights due diligence that the Chinese context requires.

b. Sources and explanations

UYGHUR FORCED LABOUR: In 2016, Grammer signed a joint venture agreement with Shaanxi Automobile Group,⁴⁰ a state-owned manufacturer with factories in Urumqi, Xinjiang. Shaanxi Automobile is part of the Uyghur forced labour regime. The company hires workers through state-organized poverty alleviation programmes in China’s western provinces.^{41,42} A news

report shows that farmers are transported to the company’s factory in Xinjiang.⁴³ In 2022 the company was awarded the “best practice unit for the reform of industrial workers” in Xinjiang.^{44,45}

A press note from February 2023 informs about a delegation from the 4th Division of the Xinjiang Production and Construction Corps (XPCC) visiting Shaanxi Automobile to discuss a collaboration agreement.⁴⁶

Shaanxi Automobile also recruits workers from vocational schools in Xinjiang. Vocational training has been identified as a channel for forced labour and repression of Turkic ethnic groups.⁴⁷ A report dated April 2022 states that the Xinjiang factory received more than 200 students.⁴⁸ The article cites a Uyghur student at Shaanxi Automobile:

“In the future, I will send part of my salary home every month to subsidize my family.” The article goes on: “Abdukahar Idris said that his family is in Kashgar, and his younger siblings are still in school. This job is very important.”

These statements imply that students are primarily engaged in wage labour, which violates national regulations on student internship programs.



Figure 7: Labour transfer of farmers from Zhuanglang county, Gansu, to Shaanxi Automobile in Urumqi, Xinjiang.

Two of the vocational schools collaborating with Shaanxi Automobile are run by the Xinjiang Production and Construction Corps.^{49,50} Both schools recruit students from poor families. The students sign three-party agreements (see also section III.1.2 of part I in this report on working and living conditions) with the company and the school, which obliges them to go through the entire education process including a one-year internship at the factory.⁵¹

INDUSTRIAL POVERTY ALLEVIATION: Grammer participates in west-east labour transfers. We found information on poverty alleviation recruitment in Jingyuan county, Gansu province, dated April 2020. Grammer is listed as an employer seeking more than 100 workers of ages 18 – 35.⁵² Comprehensive salary (which includes an undetermined number of overtime hours) is RMB 4000 – 5000 (about € 510 – 640). One year earlier, in July 2019, Grammer participated

in the same west-east poverty alleviation programme. At that time the company recruited workers of ages 18 – 40 and offered a comprehensive salary of 4700 – 5500 (about € 600 – 700).⁵³ Thus, not only did the company attempt to benefit from state-organized labour transfers that entail a high risk of forced labour but Grammer also reduced wages for impoverished workers despite rising living costs.

In another article, Grammer is mentioned as the destination for six poor farmers from Fuping county in Shaanxi province, who were mobilized through local poverty alleviation cadres' door-to-door recruitment in April 2020.⁵⁴ The largest non-Han ethnic group on Shaanxi are Hui, who face increasing political repression due to their Muslim religious and cultural roots.⁵⁵

4.2.3 Knorr-Bremse

SALIENCE: VERY HIGH
LEVERAGE: LINKED

a. Overall risk assessment

Knorr-Bremse is an important supplier to CRRC. This business relationship constitutes a link to Uyghur forced labour risks (see section IV.2.1).

In addition, a representative of Knorr-Bremse made a public statement in 2020 that the company will actively participate in industrial poverty alleviation and deepen its collaboration with CRRC in this field. If realized, Knorr-Bremse would be actively contributing to state-imposed forced labour.

Knorr-Bremse has also established a joint venture with Dongfeng Motors, which participates in the Xinjiang state-imposed forced labour regime. This partnership is not related to the railway supply chain but indicates weak incentives to conduct heightened human rights due diligence.

b. Sources and explanations

UYGHUR FORCED LABOUR: Knorr-Bremse's business activities in the rolling stock sector may be linked to Uyghur forced labour. We find that Knorr-Bremse is a main supplier of braking systems and maintenance services to CRRC Dalian, a main branch of CRRC.^{56,57} CRRC Dalian owns 100% of the shares of CRRC Lanzhou,⁵⁸ the latter in turn holds 100% of the shares in CRRC Xinjiang.⁵⁹ The shareholding structure indicates a line of command and most likely facilitates collaborative production among these units. Knorr-Bremse's business relations with CRRC should therefore be considered to be linked to Uyghur forced labour.

Knorr-Bremse's business operations in the automobile sector are also linked to Uyghur forced labour through a joint venture with Dongfeng Motors.⁶⁰ Dongfeng Motors has been sending poverty alleviation cadres to Keping county in Xinjiang since 2013. According to a government document, the purpose is to "help cadres and people in poor areas update their ideas and concepts, and to continuously improve their quality." The document further states that cadres should use "transfer of employment" and assist in strengthening the construction of grassroots party organizations.⁶¹

Another government report indicates that Dongfeng is directly involved in channelling Uyghur farmers and herdsmen into poverty alleviation workshops. The report says that Dongfeng:

“(...) helped more than 150 farmers find employment.” The report goes on “Amanguli Rouzi, a villager in Tomaerike Village, is an employee of Xingke Clothing. She said: ‘Working in the company allows me to support myself. Now I can get performance awards every month, and I feel that I am at home. All improved.’”⁶²

This business relationship is not part to the locomotive sector. But it still represents a relevant risk factor as it indicates that Knorr-Bremse’s economic interests are vested in the Chinese forced labour regime, which may prevent the company from conducting independent human rights due diligence.

INDUSTRIAL POVERTY ALLEVIATION: In 2020, Knorr-Bremse secured a large-scale order from CRRC. Perhaps to show commitment, Knorr-Bremse agreed to collaborate with CRRC in the field of poverty alleviation in Gangu county, Gansu province (see also section IV.2.1). The company’s sustainability manager visited several poverty alleviations workshops there. According to a government report, Knorr-Bremse’s representative said:

“In the next stage of pairing assistance, Knorr-Bremse Group will give full play to its own development advantages, and work with CRRC to strengthen exchanges and actively implement assistance policies and measures and strive to seek cooperation between the two parties. Opportunities for cooperation in more fields and in a wider range will promote win-win cooperation and coordinated development between the two parties.”⁶³

4.2.4 KTK Group

SALIENCE: VERY HIGH
LEVERAGE: CAUSING/CONTRIBUTING

a. Overall risk assessment

There are multiple forced labour risks related to KTK. The Group has received Uyghur workers through state-imposed labour transfers. Furthermore, KTK participates in labour transfer programmes in other minority areas where participation cannot be considered voluntary. KTK also receives students from poor households through potentially exploitative internship programmes. Internships seem to include under-age students, which suggests that KTK could be implicated in child labour.

b. Sources and explanations

UYGHUR FORCED LABOUR: We found information indicating that KTK has received Uyghur workers through state organised labour transfer schemes. A report from July 2018 states that Nilek county in Xinjiang sent a government delegation to KTK Group in Yaoguan to visit relocated workers. The delegation met 40 workers from Nilek. The article mentions that dorms for these workers were renovated to respect the living customs of minority employees.⁶⁴



Figure 8: Relocated workers from Nilek county, Xinjiang arriving at KTK Group in Jiangsu.⁶⁵
The banner states: “A warm welcome to the Nilek Labour Force coming to KTK-Group for work.”

An article from July 2019 reports that 41 Uyghur workers were selected for re-location to KTK Group in Wujin. According to the report, the workers underwent training to “gradually improve migrant workers’ quality”. In addition, leading cadres and police officers were selected to “form a labour force employment service management team”.⁶⁶

Another article dated March 2019, states the following:

“In the past, Sai Erjiang took care of 20 cows at home. During the Spring Festival, Sai Erjiang’s mother decided to hand over the cattle to the cowherd after watching the feature film ‘Nilek went to Jiangsu KTK Group to work’ in the village committee, and let her son go out to work to earn money and increase his knowledge.”

INDUSTRIAL POVERTY ALLEVIATION: KTK-Group participates in state-organized labour transfer schemes in Shaanxi province. An article dated August 2017 features a job fair that Pingli county organized in collaboration with seven companies including KTK-Group. The fair targeted registered poor households. During the fair, more than 200 people were recruited.⁶⁷ Figure 9 shows that the job fair is highly ordered, suggesting that participation is not voluntary.



Figure 9: Job fair for recruiting poor workers in Pingli county, Shaanxi province.⁶⁸

STUDENT INTERNS: KTK-Group has also received students from impoverished families. The company has signed a collaboration agreement with Haimen Technical Secondary School in Mian county, Shaanxi province. The school supplies students for internships. At the same time, it is stated that students work there to earn a wage helping their families to get rid of poverty. Agreements between this school and several companies, however, seem to ensure

cheap labour supply rather than providing skill training. The agreement's intention becomes obvious in relation to a textile producer - another collaboration partner of this school. Under the same framework as KTK-Group, this company has built a factory close to the school and the school provided 1000 square meters of school buildings for the factory's production.⁶⁹ Another article reporting on the collaboration between Haimen Technical School and a.o. KTK-Group features an image of vocational students who were relocated for internships.⁷⁰ Judging from the picture below, many of the students seem to be minors.



Figure 10: Vocational school students from poor families are relocated to work in factories.⁷¹

4.2.5 Secheron

SALIENCE: VERY HIGH
LEVERAGE: CAUSING/CONTRIBUTING

a. Overall risk assessment

Secheron has established a joint-venture partnership with Daqo developing and manufacturing direct circuit power traction systems for the locomotive and rolling stock sector. Daqo participates in the Uyghur forced labour regime in Xinjiang.

Silicone products such as silicon steel sheets, silicone rectifiers, and silicon carbide, are used in the construction of traction power systems. Consequently, Secheron could be contributing to Uyghur forced labour through its joint venture with Daqo.

b. Sources and explanations

UYGHUR FORCED LABOUR: Secheron and Daqo New Energy run a joint venture “Daqo Secheron Traction Power Co. Ltd.”⁷² The parent company of Daqo New Energy is Xinjiang Daqo New Energy.⁷³ This company is on the US Homeland list of Chinese manufacturers using forced labour in Xinjiang.⁷⁴

We find information indicating that Xinjiang Daqo is an investment of the Xinjiang Production and Construction Corps.⁷⁵ Daqo has received US\$11.7 million in 2018 and US\$5.1 million in 2019 from the XPCC-run Shihezi government. The company has also obtained subsidies for labour placements from the Chinese government.⁷⁶ The latter is an indication for the direct use of forced labour.

4.2.6 Siemens

SALIENCE: VERY HIGH
LEVERAGE: CAUSING/CONTRIBUTING

a. Overall risk assessment

Similar to Secheron (above), Siemens has established a joint-venture partnership with Daqo which participates in the Uyghur forced labour regime in Xinjiang.

Silicone is a complementary product for the joint venture between Siemens and Daqo because busbar trunking systems require pure silicon minerals. Consequently, Siemens could be contributing to Uyghur forced labour.

b. Sources and explanations

UYGHUR FORCED LABOUR: Siemens established a joint venture with Daqo, Zhenjiang Siemens Busbar Trunking Systems Co. Ltd. providing products for the railway sector.⁷⁷ The parent company of Daqo New Energy is Xinjiang Daqo New Energy.⁷⁸ This company is on the US Homeland list of Chinese manufacturers using forced labour in Xinjiang.⁷⁹

We find information indicating that Xinjiang Daqo is an investment of the Xinjiang Production and Construction Corps.⁸⁰ Daqo has received US\$11.7 million in 2018 and US\$5.1 million in 2019 from the XPCC-run Shihezi government. The company has also obtained subsidies for labour placements from the Chinese government.⁸¹ The latter is an indication for the direct use of forced labour.

4.2.7 Victall

SALIENCE: VERY HIGH
LEVERAGE: CAUSING/CONTRIBUTING

a. Overall risk assessment

Victall is involved in multiple labour transfer programmes involving poor farmers and herdsmen from ethnic minority areas in Gansu. These transfers target a.o. Tibetan ethnic townships in Wudu. We, therefore, evaluate the forced labour risks at Victall as very high.

In addition, the company's collaboration with vocational schools entails a high risk of exploiting students' vulnerable position during mandatory internships.

b. Sources and explanations

INDUSTRIAL POVERTY ALLEVIATION: Victall benefits from labour transfers through a west-east poverty alleviation agreement between Longnan city in Gansu and Qingdao in Shandong. Victall has received workers regularly. A government report from April 2017 mentions that Victall had got three batches of workers until April 2017.⁸²

Another report from April 2018, mentions Victall in Qingdao as a labour base for transfers from Cheng county (belonging to Longnan) in Gansu.⁸³

In addition, the local government of Wudu in Longnan stated in a report from February 2018 that 157 people were transferred in batches to a.o. Victall in Qingdao.⁸⁴ There are two Tibetan ethnic townships in Wudu.



Figure 11: Labour transfer from Cheng county in Gansu to Victall in Qingdao.⁸⁵

STUDENT INTERNS: Besides labour transfers through poverty alleviation programmes, Victall makes use of vocational school collaborations. An article from December 2018 informs about an agreement between Victall and Shandong Industrial Technician College.⁸⁶ The agreement emphasizes that collaboration should be guided by demand and mutual support, which may constitute the basis for exploitative internships as described in part 1 of this report.



Figure 12: Ceremony for the signing of a collaboration agreement between Victall and Shandong Industrial Technician College.⁸⁷

4.2.8 Voith Turbo

SALIENCE: VERY HIGH
LEVERAGE: CAUSING/CONTRIBUTING

a. Overall risk assessment

Uyghur forced labour may enter Voith's supply chain through its joint venture with CRRC, which runs train and railway equipment production facilities in Xinjiang (see IV.2.1).

In addition, Voith Turbo has closely collaborated with the Government in Xinjiang, which may prevent the company from conducting and acting upon comprehensive human rights due diligence. The company's most recent sustainability report (2020/2021) corroborates this concern as there is no mention of Xinjiang, and state-imposed forced labour in China is not identified as a material issue.⁸⁸

b. Sources and explanations

UYGHUR FORCED LABOUR: Voith Turbo and CRRC established two joint ventures in Beijing and Shanghai. According to a press release these joint ventures “focus on research and development, manufacturing, sales and services of a wide range of products for the rail industry.”⁸⁹ Consequently, Voith Turbo is potentialising contributing to state-imposed forced labour in Xinjiang.

In addition, Voith looks back at a long-standing cooperation with Xinjiang authorities. An article dated Feb. 2013 states: “During these 7 years, Voith Germany has worked closely with the autonomous region Government to show Xinjiang the latest power transmission equipment and technology” and “We [Voith] have cultivated a profound friendship for long-term cooperation with Xinjiang coal management departments at all levels as well as energy groups.”⁹⁰

Ties to Xinjiang seem to continue even after concerns over forced labour in the region became widely acknowledged.^{91,92} In this context, we found a report from Voith Innovation Lab sending a team to a coal mine close to Urumqi in September 2019.⁹³ This report states:

“Be prepared for things to be different. In a region like Xinjiang which has historically suffered from tension between ethnic groups you will be closely watched. Regular passport controls, an official registration at police station and countless controls of our luggage are all part of the standard procedure. Keep calm, it's not personal.”⁹⁴

5. Conclusions

Our research shows that the locomotive and rolling stock industry in China is vested in the state-imposed forced labour regime. One of the reasons is the central role of state-owned corporations which serve as agents of the state and assume political responsibilities. State-owned corporations such as the CRRC are key actors in the global supply chain and at the same time important gatekeepers of the Chinese market. Beyond the strong influence of Chinese state actors, we also found several corporations to be uncritical, suggesting that they have not engaged in the heightened human rights due diligence that the Chinese context requires.

Internet-based research on state-imposed forced labour has become more limited as both state authorities and corporations are removing potentially compromising content. Consequently, the information we are still able to access should be viewed as a lower bound of human rights concerns. To produce a more comprehensive corporate human rights due diligence, it will be necessary to require corporations to provide detailed information about supply chain links beyond tier one and two.

Appendix 1: Supplier forums

Supplier
ABB
Annax
Atlas Copco
Axis
BFG
BNP
Bombardier Sifang Transportation and Lanp Electrical
Bombardier Sifang Transportation and Victall (GRP)
Bombardier Transportation Equipment (Suzhou) Co., Ltd (BTES)
Bombardier Transportation Matranovak (BTM)
Bonatrans
CAF
Changzhou Evergreen
Dellner,
EVAC
Fabricación Asientos Vehículos Industriales
Faiveley
Franz Kiel
Funkwerk
GHH
Grammer
Hoppecke
Hübner,
Icomera
IFE-Victall
IGW
JST
Knorr-Bremse
KTK
Lucchini
Merak-Jinxin
Metawell
Möve
Nanjing Kangni
Qingdao Yicheng
Richard
SAVAS
Schunk,
Secheron
SEMVAC
Shanghai Faiveley
Shijiazhuang King
Siemens
SKODA
Stemmann,
Strabag
Tsingdao Kampion
Victall
Victall-Dellner
Voith Turbo
Voith Turbo Scharfenberg
Wabtec-Faiveley
Wuxi Jinxin
Wuxi Wanli

REFERENCES >

Introduction

- 1 TI Sweden, <https://etisverige.se/aktuellt/forced-labour-and-human-rights-risks-behind-electric-buses-in-swedish-public-transport/>
- 2 Alstom acquired Bombardier Transportation in January 2021. The ownership change had no impact on data collection or analysis for this report. We treat Alstom and Bombardier as separate entities as most data points relate to the time before the transaction.
- 3 OECD (2018), OECD Due Diligence Guidance for Responsible Business Conduct, se kapitel 3.2 och Q39-40.
- 4 The Swedish National Agency for Public Procurement, <https://www.upphandlingsmyndigheten.se/statistik-som-utvecklar-den-offentliga-affaren/fortsatt-okat-intresse-for-offentliga-upphandlingar/>
- 5 The Swedish Environmental Protection Agency, <https://www.naturvardsverket.se/data-och-statistik/klimat/vaxthusgaser-utslapp-fran-inrikes-transporter/#:~:text=Utsl%C3%A4ppen%20fr%C3%A5n%20inrikes%20transporter%202022,procent%20till%202030%20j%C3%A4mf%C3%B6rt%202010>
- 6 Skånetrafiken, https://www.skånetrafiken.se/globalassets/dokumentbank/miljo/hallbarhetsredovisning-2022_210x297mm_kn_tanp.pdf
- 7 SKR, <https://skr.se/download/18.45167e4317e2b341b24adfc0/1642687744526/7585-529-5.pdf>
- 8 DN, <https://www.dn.se/varlden/har-ar-varldens-storsta-satsning-pa-hoghastighetstag/>
- 9 Utrikesmagasinet, <https://www.ui.se/utrikesmagasinet/intervjuer/sa-kan-ren-energi-undga-att-bli-en-smutsig-affar/>
- 10 Reports and Insights, <https://www.reportsandinsights.com/report/train-battery-market>
- 11 Elbilen, <https://elbilen.se/nyheter/tyskland-testar-nyutvecklade-batteridrivna-tag/>
- 12 Swedish Ministry for Foreign Affairs, <https://www.regeringen.se/rapporter/2022/06/manskliga-rattigheter-demokrati-och-rattsstatens-principer-i-kina/#:~:text=Den%20kinesiska%20konstitutionen%20garanterar%20C3%A5sikts,sociala%20medier%20granskas%20och%20regleras>
- 13 Ibid.
- 14 UN, <https://news.un.org/en/story/2022/08/1125932>
- 15 The Australian Strategic Policy Institute, https://ad-aspi.s3.ap-southeast-2.amazonaws.com/2022-10/Uyghurs_for_sale-11OCT2022.pdf?VersionId=N2JQOako7S4OTiSb6L7kKE5nY2d_LD25
- 16 Mercator Institute for China Studies (MERICS), <https://merics.org/de/kommentar/chinas-anti-foreign-sanctions-law-warning-world#:~:text=Despite%20its%20title%2C%20the%20new,perceives%20as%20harming%20its%20interests>
- 17 Columbia JTL, <https://www.jtl.columbia.edu/bulletin-blog/chinas-ambition-of-extraterritorial-jurisdiction-and-the-american-response>
- 18 Reuters, <https://www.reuters.com/world/china/china-wants-mobilise-entire-nation-counter-espionage-2023-08-01/>
- 19 EU, [https://www.europarl.europa.eu/RegData/etudes/BRIE/2023/739356/EPRS_BRI\(2023\)739356_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2023/739356/EPRS_BRI(2023)739356_EN.pdf)
- 20 Eur-Lex, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52022PC0071>
- 21 U.S. Customs and Border Protection, <https://www.cbp.gov/trade/forced-labor/UFLPA>
- 22 OECD, <https://www.oecd.org/publications/oecd-guidelines-for-multinational-enterprises-on-responsible-business-conduct-81f92357-en.htm>
- 23 Aktuell hållbarhet, <https://www.aktuellhallbarhet.se/miljo/miljopolitik/klart-sa-vill-eu-parlamentet-losa-tillgangen-pa-ramaterial/>
- 24 Region Stockholm, <https://www.regionstockholm.se/globalassets/2.-kollektivtrafik/regionalt-trafikforsorjningsprogram/remissversion-regionalt-trafikforsorjningsprogram-for-stockholms-lan-2035.pdf>
- 25 Transitio, <https://transitio.se/vart-uppdrag/>
- 26 Eur-LEX, <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0024>
- 27 This option is introduced in Article 57.4 (a)
- 28 The Swedish National Agency for Public Procurement, <https://www.upphandlingsmyndigheten.se/om-hallbar-upphandling/>
- 29 National Secretariat for Sustainable Public Procurement, [https://www.xn--hllbarupphandling-8qb.se/#:~:text=Sveriges%20regioner%20har%20en%20gemensam,\(inklusive%20klimat\)%20och%20aff%C3%A4rsetik.&text=Upphandling%20%C3%A4r%20ett%20viktigt%20styrmedel%20f%C3%B6r%20att%20n%C3%A5%20samh%C3%A4llspolitiska%20m%C3%A5l](https://www.xn--hllbarupphandling-8qb.se/#:~:text=Sveriges%20regioner%20har%20en%20gemensam,(inklusive%20klimat)%20och%20aff%C3%A4rsetik.&text=Upphandling%20%C3%A4r%20ett%20viktigt%20styrmedel%20f%C3%B6r%20att%20n%C3%A5%20samh%C3%A4llspolitiska%20m%C3%A5l)
- 30 National Secretariat for Sustainable Public Procurement, https://www.xn--hllbarupphandling-8qb.se/_files/ugd/5fb6a9_05f1f7aea6284d8db77f1216a0b8f148.pdf
- 31 National Secretariat for Sustainable Public Procurement, https://www.xn--hllbarupphandling-8qb.se/_files/ugd/881a14_cc34b9ba82b240cc844b71da0cd1e7de.pdf

- 32 National Secretariat for Sustainable Public Procurement, https://www.xn--hllbarupphandling-8qb.se/_files/ugd/881a14_c4440c301353473c8ab0280a5c74965b.pdf
- 33 Business and Human Rights Resource Centre, <https://www.business-humanrights.org/en/latest-news/china-shenzhen-verites-closure-due-to-fabricated-report-on-xinjiang-according-to-state-media/>
- 34 The Guardian, <https://www.theguardian.com/world/2023/mar/24/authorities-raid-beijing-offices-of-us-mintz-group-detaining-five-chinese-staff>
- 35 The Guardian, <https://www.theguardian.com/world/2023/may/09/china-targets-foreign-consulting-companies-in-anti-spying-raids>
- 36 Human Rights Watch, https://www.hrw.org/sites/default/files/media_2022/11/Social_audits_brochure_1122_WEB-SPREADS_0.pdf and <https://www.scmp.com/economy/china-economy/article/3118683/bribes-fake-factories-and-forged-documents-buccaneering>

Human Rights and Working Conditions

- 1 <https://japan-forward.com/weak-demand-for-chinas-high-speed-trains-a-ticking-time-bomb/#:~:text=Profitability%20as%20disregarded%20as%20the,giant%20Evergrande%20Group's%20liquidity%20crisis.>
- 2 “How rolling-stock manufacturers can lay track for profitable growth | McKinsey.” <https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/how-rolling-stock-manufacturers-can-lay-track-for-profitable-growth> (accessed Feb. 14, 2023).
- 3 Alstom acquired Bombardier Transportation in January 2021. The ownership change had no impact on data collection or analysis for this report. In particular, we treat Alstom and Bombardier as separate entities as most data points relate to the time before the transaction.
- 4 “Better Work’s Global Compliance Assessment Tool (CAT),” Better Work. Accessed: Dec. 19, 2023. [Online]. Available: <https://betterwork.org/reports-and-publications/better-works-global-compliance-assessment-tool/>
- 5 https://www.ohchr.org/documents/publications/faq_principlesbusinesshr.pdf
- 6 <https://www.ungreporting.org/glossary/severe-human-rights-impact/>
- 7 “China sees progress in tackling child labour but problems remain,” China Labour Bulletin, Jun. 12, 2019. <https://clb.org.hk/content/china-sees-progress-tackling-child-labour-problems-remain> (accessed Nov. 03, 2022).
- 8 Tang, Can, Liqiu Zhao, and Zhong Zhao. 2018. “Child labor in China.” *China Economic Review* 51: 149-166.
- 9 K. Thelwell, “10 Facts about Child Labor in China,” The Borgen Project, Aug. 26, 2019. <https://borgenproject.org/10-facts-about-child-labor-in-china/> (accessed Oct. 14, 2022).
- 10 <https://www.statista.com/statistics/227035/number-of-students-at-secondary-vocational-schools-in-china/>
- 11 http://www.oit.org/wcmsp5/groups/public/---asia/---ro-bangkok/---ilo-beijing/documents/publication/wcms_306624.pdf
- 12 For example China Labor Watch reports: <https://chinalaborwatch.org/students-forced-to-intern-at-wuling-motors/> or <https://chinalaborwatch.org/amazons-supplier-factory-foxconn-recruits-illegally-interns-forced-to-work-overtime/> SACOM report: <http://sacom.hk/2018/10/23/investigative-report-apple-watch-series-4-still-failed-to-protect-teenage-student-workers/>.
- 13 Chan, Jenny, Ngai Pun, and Mark Selden. “Interns or workers? China’s student labor regime.” *Asian Studies* 1.1 (2015): 69-98. Brown, Earl V., and Kyle A. DeCant. “Exploiting Chinese interns as unprotected industrial labor.” *APLPJ* 15 (2014): 149. Chan, Jenny. 2017. “Intern Labor in China.” *Rural China: An International Journal of History and Social Science = Zhongguo Xiang Cun Yan Jiu* 14 (January): 82-100.
- 14 Mapping Child Labour Risks in Global Supply Chains’, Business and Human Rights Gateway. <https://human-rights.wbcds.org/project/mapping-child-labour-risks-in-global-supply-chains/> (accessed Nov. 03, 2022).
- 15 签了三方协议可以随时辞职吗-法律知识 | 律图. Accessed: Nov. 19, 2023. [Online]. Available: <https://www.64365.com/zs/1077187.aspx>
- 16 <https://thediplomat.com/2021/07/chinas-709-crackdown-is-still-going-on/>
- 17 The following links are examples on actions against workers, labour lawyers and CSOs under the permanent crack down on labour movements from 2015 - 2022. <https://www.business-humanrights.org/en/latest-news/china-more-than-300-rights-lawyers-detained-in-nationwide-crackdown-including-lawyers-who-handled-cases-on-corporate-abuses-at-least-6-face-formal-charges/> and <https://www.ohchr.org/SP/NewsEvents/Pages/DisplayNews.aspx?NewsID=26612&LangID=E> and <https://www.cecc.gov/publications/commission-analysis/five-years-after-709-crackdown-lawyers-continue-to-face-repression>
- <https://www.scmp.com/news/china/policies-politics/article/1901327/they-tore-through-everything-labour-activists>
- <https://www.ft.com/content/cbecd5d8-e627-11e8-8a85-04b8afea6ea3>
- <https://www.hrw.org/news/2019/04/01/chinas-labor-activists-hold-fast-freedom>
- <https://www.ft.com/content/779512aa-6a73-47ce-b924-471fa63dc5a1>

- 18 <https://www.ituc-csi.org/ituc-global-rights-index-2020>
- 19 Data for the analysis come from China Labour Bulletin, a CSO based in Hong Kong. Available at: https://maps.clb.org.hk/?i18n_language=en_US&map=1&startDate=2022-08&endDate=2023-02&eventId=&keyword=&addressId=&parentAddressId=&address=&parentAddress=&industry=&parentIndustry=&industryName=
- 20 See for example: Deng, Yanhua, and Kevin J. O'Brien. "Relational repression in China: using social ties to demobilize protesters." *The China Quarterly* 215 (2013): 533-552. Lee, Ching Kwan. *Against the law: Labor protests in China's rustbelt and sunbelt*. Univ of California Press, 2007. Xu, Yi. "Labor non-governmental organizations in China: Mobilizing rural migrant workers." *Journal of industrial relations* 55.2 (2013): 243-259.
- 21 Howell, Jude. "From Green shoots to crushed petals: Labour NGOs in China." *Made in China Journal* 6.1 (2021): 102-107.
- 22 Chen, Feng, and Mengxiao Tang. "Labor conflicts in China: typologies and their implications." *Asian Survey* 53.3 (2013): 559-583.
- 23 "Minimum Wages in China 2022: A Complete Guide," China Briefing News, Jul. 15, 2022. <https://www.china-briefing.com/news/minimum-wages-china-2022/> (accessed Oct. 26, 2022).
- 24 Guerrero Medina, C., Martínez-Fiestas, M., Viedma-del-Jesus, M.I. and Alzamora Ruiz, J., 2020. Living wage in the framework of corporate social responsibility: Analyzing its impact on consumer response. *Corporate Social Responsibility and Environmental Management*, 27(5), pp.2060-2070.
- 25 "The ILO Governing Body approves the publication and dissemination of the Definition of Recruitment Fees and Related Costs, to be read in conjunction with the General Principles & Operational Guidelines for Fair Recruitment', Mar. 28, 2019. http://www.ilo.org/global/topics/labour-migration/news-statements/WCMS_682734/lang-en/index.htm (accessed Mar. 04, 2023).
- 26 Akhter, Sadika. "Health and Safety Issues for Women Working in the Ready-Made Garment Industry in Bangladesh." (2018).
- 27 Kabir, Humayun, et al. "Health vulnerabilities of readymade garment (RMG) workers: a systematic review." *BMC Public Health* 19.1 (2019): 1-20.
- 28 Minkler, Meredith, et al. "Wage theft as a neglected public health problem: An overview and case study from San Francisco's Chinatown district." *American journal of public health* 104.6 (2014): 1010-1020. Fernandez-Esquer, Maria Eugenia, et al. "Structural racism and immigrant health: exploring the association between wage theft, mental health, and injury among Latino day laborers." *Ethnicity & Disease* 31.Suppl (2021): 345-356.
- 29 Khan, Muhammad, Kashif Muhmood, Shumaila Noureen, and Saima Noureen. "Economic burden of occupational illness on women workers in textile industry, Pakistan." *The Business & Management Review* 9, no. 4 (2018): 70-74.
- 30 Rahul, V., and Dhanish Jose. "Analysing the influence of non-reported pain and risk experienced by employees in the textile industry." *Materials Today: Proceedings* (2021).
- 31 Chen, Caixia, Patsy Perry, Yixiong Yang, and Cheng Yang. "Decent work in the Chinese apparel industry: Comparative analysis of blue-collar and white-collar garment workers." *Sustainability* 9, no. 8 (2017): 1344.

Forced Labour

- 1 “Xi Pledges Stronger Support to Rid All Chinese of Poverty by 2020 - China - Chinadaily.Com.Cn,” accessed September 11, 2022, https://www.chinadaily.com.cn/china/2015-10/16/content_22204202.htm.
- 2 Camille Boullenois, “Poverty Alleviation in China: The Rise of State-Sponsored Corporate Paternalism,” *China Perspectives* 2020, no. 3 (September 1, 2020): 47–56, <https://doi.org/10.4000/chinaperspectives.10456>.
- 3 SAP-FL, “ILO Indicators of Forced Labour,” Brochure, October 1, 2012, http://www.ilo.org/global/topics/forced-labour/publications/WCMS_203832/lang--en/index.htm.
- 4 “Online Course: Preventing and Addressing Forced Labour and Trafficking in Persons in east and south-east Asia,” Course, March 22, 2016, http://www.ilo.org/asia/events/WCMS_462316/lang--en/index.htm.
- 5 “Tools and Resources for Business on Forced Labour,” Resource list, December 13, 2022, http://www.ilo.org/empent/areas/business-helpdesk/tools-resources/WCMS_144883/lang--en/index.htm.
- 6 Qingjie Zeng, “Managed Campaign and Bureaucratic Institutions in China: Evidence from the Targeted Poverty Alleviation Program,” *Journal of Contemporary China* 29, no. 123 (2020): 400–415.
- 7 Qingjie Zeng, “Managed Campaign and Bureaucratic Institutions in China: Evidence from the Targeted Poverty Alleviation Program,” *Journal of Contemporary China* 29, no. 123 (May 3, 2020): 400–415, <https://doi.org/10.1080/10670564.2019.1645489>.
- 8 Kathryn Gomersall, “Imposition to Agonism: Voluntary Poverty Alleviation Resettlement in Rural China,” *Political Geography* 82 (October 1, 2020): 102250, <https://doi.org/10.1016/j.polgeo.2020.102250>.
- 9 Yi Xiaocuo, “Recruiting Loyal Stabilisers: On the Banality of Carceral Colonialism in Xinjiang,” *Made in China Journal* (blog), October 25, 2019, <https://madeinchinajournal.com/2019/10/25/recruiting-loyal-stabilisers-on-the-banality-of-carceral-colonialism-in-xinjiang/>.
- 10 Xinrong Ma, “Ethnic Minority Empowerment and Marginalization: Yi Labour Migrants Outside China’s autonomous regions,” *China Information* 33, no. 2 (2019): 146–64.
- 11 Sixth Tone, “This Year, Remote Lüeyang Beat Poverty. Now Comes the Hard Part.,” #SixthTone, October 22, 2020, <https://www.sixthtone.com/news/1006333/https%3A%2F%2Fwww.sixthtone.com%2F-news%2F1006333%2Fthis-year%252C-remote-l%25C3%25BCeyang-beat-poverty.-now-comes-the-hard-part>.
- 12 “截至今年6月底 易地搬迁脱贫群众就业规模459.4万人_滚动新闻_中国政府网,” accessed December 30, 2023, https://www.gov.cn/xinwen/2022-07/11/content_5700344.htm.
- 13 Chris Smith and Jenny Chan, “Working for Two Bosses: Student Interns as Constrained Labour in China,” *Human Relations* 68, no. 2 (2015): 305–26; Jenny Chan, Ngai Pun, and Mark Selden, “Interns or Workers? China’s Student Labor Regime,” *The Asia-Pacific Journal*, 2015; Chris KC Chan and Yujian Zhai, “Active Labour Market Policies in China—towards Improved Labour Protection?,” *Journal of Asian Public Policy* 6, no. 1 (2013): 10–25.
- 14 “Suicide Exposes China’s Exploitative Vocational Internships,” *The World of Chinese*, accessed March 13, 2023, <https://www.theworldofchinese.com/2021/07/students-suicide-exposes-abusive-factory-internships/>.
- 15 “China Helps More Young People Shake off Poverty with Free Vocational Education,” *People’s Daily Online*, July 26, 2019, <http://en.people.cn/n3/2019/0726/c90000-9600751.html>.
- 16 刘佳, “Escaping the Poverty Trap,” *China Today*, accessed March 13, 2023, http://www.chinatoday.com.cn/ctenglish/2018/tpxw/201903/t20190303_800158742.html.
- 17 “OHCHR Assessment of Human Rights Concerns in the Xinjiang Uyghur autonomous region, People’s Republic of China,” OHCHR, accessed March 13, 2023, <https://www.ohchr.org/en/documents/country-reports/ohchr-assessment-human-rights-concerns-xinjiang-uyghur-autonomous-region>.
- 18 “OHCHR Assessment of Human Rights Concerns in the Xinjiang Uyghur autonomous region, People’s Republic of China.”
- 19 “OHCHR Assessment of Human Rights Concerns in the Xinjiang Uyghur autonomous region, People’s Republic of China.”
- 20 Adrian Zenz, “Beyond the Camps: Beijing’s Long-Term Scheme of Coercive Labor, Poverty Alleviation and Social Control in Xinjiang | *Journal of Political Risk*,” accessed October 10, 2022, <https://www.jpolarisk.com/beyond-the-camps-beijings-long-term-scheme-of-coercive-labor-poverty-alleviation-and-social-control-in-xinjiang/>.
- 21 Laura T. Murphy, Nyrola Elimä, and David Tobin, “Until Nothing Is Left,” *China’s Settler Corporation and Its Human Rights Violations in the Uyghur Region A Report on the Xinjiang Production and Construction Corps*. Sheffield Hallam University Helena Kennedy Centre for International Justice. *Ons/3/38/%E5%85(2022): A8*.
- 22 “Towards a Mandatory EU System of Due Diligence for Supply Chains | Think Tank | European Parliament,” accessed September 11, 2022, [https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI\(2020\)659299](https://www.europarl.europa.eu/thinktank/en/document/EPRS_BRI(2020)659299).
- 23 “Demystifying the Modern Slavery Act 2015 for Corporate Lawyers,” *Practical Law*, accessed September 11, 2022, [http://uk.practicallaw.thomsonreuters.com/w-025-6078?transitionType=Default&contextData=\(sc.Default\)&firstPage=true](http://uk.practicallaw.thomsonreuters.com/w-025-6078?transitionType=Default&contextData=(sc.Default)&firstPage=true).
- 24 “Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on Public Procurement and Repealing Directive 2004/18/EC Text with EEA Relevance,” 094 OJ L § (2014), <http://data.europa.eu/eli/dir/2014/24/oj/eng>.

- 25 Nicolas Bueno and Claire Bright, “IMPLEMENTING HUMAN RIGHTS DUE DILIGENCE THROUGH CORPORATE CIVIL LIABILITY,” *International & Comparative Law Quarterly* 69, no. 4 (October 2020): 789–818, <https://doi.org/10.1017/S0020589320000305>.
- 26 We searched for corporate sustainability reports from companies that, according to our investigation, are linked to or contribute to state-imposed forced labour in China. We excluded Chinese corporations that are participating in state organised labour transfer programs in Xinjiang (CRRC, KTK Group, and Daqo). Victall (<http://www.victall.com/en/>), Secheron (<https://www.secheron.com/>), does not publish a report on CSR, sustainability or ESG on its website. The 2022 sustainability reports from Grammer (https://reports.grammer.com/annual-report/2022/_assets/downloads/annual-report-grammer-ar22.pdf), and Knorr-Bremse (https://sustainabilityreport.knorr-bremse.com/2022/appendix/downloads/en/Knorr-Bremse_Sustainability-Report-2022.pdf), mention commitment to prevent forced labour in general but do not identify forced labour as a material risk in general and state-imposed forced labour in China in particular. Voith Turbo’s 2022 sustainability report (https://voith.com/corp-en/VZ_Sustainability-Report_22_en.pdf) states that the company did not receive any reports about forced labour in its supply chain. The report does not identify state-imposed forced labour in China as a material risk. Siemens’ 2023 sustainability report (<https://assets.new.siemens.com/siemens/assets/api/uuid:00095b96-4712-4cd1-b045-19d5df704358/sustainability-report-fy2023.pdf>) identifies forced labour as a material risk in general but does not mention state-imposed forced labour in China in particular. The report generically refers to education, whistle blower systems, and peer dialogues as measures to address forced labour.
- 27 “乌鲁木齐中车轨道交通装备有限公司将盛装亮相2022第五届中国（新疆）国际智能交通展！”，Weixin Official Accounts Platform, accessed January 17, 2023, https://mp.weixin.qq.com/s?src=11×tamp=1673988098&ver=4294&signature=8AlfnhhRT0OJaWAN*Cn5bLEfDMxxdnWdEFoZ-JNkusPZaD6Z4tN-HZlPg1ot7hL6S*7OJAeLoKEMDu2HMW-EKlpWXWAgNW5Soid4EdAZ83FvYkgc4zqr7U*r5ziX383oB&new=1.
- 28 姚屹李文峰, “中车株机进军新疆产业高地 深化与乌鲁木齐战略合作_经济.民生_湖南频道,” accessed January 19, 2023, <https://hn.rednet.cn/content/2016/07/29/1022903.html>.
- 29 “张春贤：全力推进中车四大板块业务在新疆全面落地，加快推进PPP项目进度,” Weixin Official Accounts Platform, accessed January 17, 2023, https://mp.weixin.qq.com/s?src=3×tamp=1673988192&ver=1&signature=OjczX*iAncdungGh8yQb96-NQgWYclBuTu4T72VrWPeh4V65ukdjxjAwKvz6f3wwImb-14bik86BByZz8MS-ffj53EuNY6oLT9ZXVQ-ovbiRxT5jqftFDLAXZ2toYmzSrAFyV93VU22oOF3Uwmg3p44n-VA8YDRaTpWtbouON4=.
- 30 ““风”吹财到, ‘煤’开眼笑! 哈密吹响产业倍增‘冲锋号’-哈密市人民政府,” accessed January 19, 2023, <http://www.hami.gov.cn/info/4454/330110.htm>.
- 31 “中华保险集团‘不忘初心、牢记使命’学习教育暨思想政治工作会议在新疆召开,” accessed January 17, 2023, <http://www.cic.cn/companyNews/2720.jhtml>.
- 32 Vicky Xiuzhong Xu Ruser Danielle Cave, James Leibold, Kelsey Munro, Nathan, “Uyghurs for Sale,” accessed December 29, 2023, <http://www.aspi.org.au/report/uyghurs-sale>.
- 33 “这就是中车！扶贫成绩单彰显央企担当,” Weixin Official Accounts Platform, accessed January 17, 2023, https://mp.weixin.qq.com/s?src=11×tamp=1673987757&ver=4294&signature=M9b3QHZZlf86W1hiz*68rVwKm-M4QLPwEMOcZ2eliUg8ZYDawhPbCe1LyjfMccD5WhZHdnZFG2d6QigPkG5SfoBrT9FqM8XKqNOqJe8vDVL-2CVJVHDTbGYxp7J-2hYB8D&new=1.
- 34 龙云飞, “麦积区召开就业扶贫劳务输转工作推进会,” Weixin Official Accounts Platform, accessed January 17, 2023, https://mp.weixin.qq.com/s?src=11×tamp=1673988598&ver=4294&signature=ouGzsUVUmWsdMffimkEBB5aVq2SsqoOnAQMsdfShAlhCyUgF7pSN7m78*kXja71QwJvUYdIW-huk5TiNiTU-nREGkM3uUqtyDbZjH*e-ZEkGIZsFDxaYoxFmCayn9P7r&new=1.
- 35 陈严梁婷, “中车株机助力十八洞村产业扶贫,” Weixin Official Accounts Platform, accessed January 17, 2023, https://mp.weixin.qq.com/s?src=11×tamp=1673987562&ver=4294&signature=gmSepIKaRSgCnNX7GU-jyuxwpunQXjoB4PX4juilgpEvGNhmswVBwGMAPGpcE*xJbsgINkED2K3rg*18a*DPd6pSlnaAqk85MuwaSaukOjiwoBY1wqUINXmNstFOGqHz8&new=1.
- 36 “甘谷‘扶贫车间’中车集团工服加工首批订单发货,” accessed January 17, 2023, <http://www.maiji.gov.cn/html/news/tsyw/2018-08/5073.html>.
- 37 “庄严承诺 | 中车大同公司扶贫路上见初心,” Weixin Official Accounts Platform, accessed January 17, 2023, https://mp.weixin.qq.com/s?src=11×tamp=1673987445&ver=4294&signature=iPqpuRiXnqYDXz6e1GTD-L7yH4zxL-q8VE7rgRYzpjAt*igYaUzUSglu4UgG7SuO6XOuSmTrAtHMBP9o6smDEBf*2SxRmbtWpSy*6lSBms3J6TGnG4ho6pO22wMNBXyG5&new=1.
- 38 Qingjie Zeng, “Managed Campaign and Bureaucratic Institutions in China: Evidence from the Targeted Poverty Alleviation Program,” *Journal of Contemporary China* 29, no. 123 (2020): 400–415.
- 39 “庄严承诺 | 中车大同公司扶贫路上见初心.”
- 40 “富平高新区第一个外资企业--德国格拉默集团车辆座椅生产基地项目盛大开业,” Weixin Official Accounts Platform, accessed January 24, 2023, https://mp.weixin.qq.com/s?src=3×tamp=1674575230&ver=1&signature=ZG6Qxw-KmOOhgTAUppDKLL8cLC28d1v88baotUxPwHLRGcHBqz595OEsLDolx*WMA*rv-biOhdud7aabK2D-4quadGGYSf5x5ZPCDvdgFac6IkphQQi3Xk-yXciYnFc4b99FapczO6obET-I3iMIeY-a*k-zxwSzyiLKSFXn6Txc=.
- 41 “眉县人社局扶贫暨陕汽专场招聘会 日期：2019年12月26日（星期四）、眉县市民中心,” Weixin Official Accounts Platform, accessed January 25, 2023, https://mp.weixin.qq.com/s?src=11×tamp=1674575755&ver=4308&signature=CJjOR31odfVJX7WK8WJn9pmyQ-vpbaECIbhheTvtHT8gG*RdeZK9ZTBo--noH3mOpT2VRq749AL-1Qk54lbd5URqY6LcNLIToewhc9FKMUIetZozI5xBRVBooAiTekPPd&new=1.

- 42 “蔡家坡经开区管委会、蔡家坡镇人民政府就业扶贫暨陕汽专场招聘会 日期：2019年12月24日（星期二）、蔡家坡凤仪国际广场,” Weixin Official Accounts Platform, accessed January 25, 2023, <https://mp.weixin.qq.com/s?src=11×tamp=1674575755&ver=4308&signature=CJjOR31odfvJX7WK8WJn9pmyQ-vpbaE-CIbhheTvtHT-HKIOlIqtCR89oDKSA4vBEmGFqZZFDzPrDLnauqZENTq6JYMz1PmsSubAErjIFExBjMGzhUCyZ84nBjA-ww-r&new=1>.
- 43 CC, “庄浪县组织第一批赴陕汽重卡就业人员,” Weixin Official Accounts Platform, accessed January 25, 2023, https://mp.weixin.qq.com/s?src=11×tamp=1674575635&ver=4308&signature=B-GOMx41Nvli4XzYmQf34FARPe6H4LD31xfW1DqN*rucHUyRmZX-SbQ1zbpDU1zCovdZFTMXYNR-SAleFI5dpT2sCbAWCO-i5-6G6KjLWyor6movcwWXH*o-WZGVDRMwG&new=1.
- 44 “新疆命名100家产业工人队伍建设改革‘最佳实践单位,’” Weixin Official Accounts Platform, accessed January 25, 2023, <https://mp.weixin.qq.com/s?src=11×tamp=1674575694&ver=4308&signature=r4f1Hfkq7mstjdGf-Nf-GmqTS2tNN6jggU3o-NJUdULhtsNJQOuyt-P5KPapsZj7VTNjwczhRXXwRoCVZq1QzmxmEo5BkPomnQuf5k-WJuVlRvXcd3Erc4DiAWdsc7CNgole&new=1>.
- 45 “2022年开发建设新疆奖和自治区工人先锋号拟表彰对象公示,” Weixin Official Accounts Platform, accessed January 25, 2023, https://mp.weixin.qq.com/s?src=11×tamp=1674575839&ver=4308&signature=8zEWEqWecTLKIDKzPdY-I4nf4vHO6hOiTS9jRsqEKveKZ6sdPcA*7R3AM8oM9lSaslxOEAKxS-PLsicShacfvug9RhshnhhSQzRyHhOe9KOHNTkm6GzEJtr3fHo*d8&new=1.
- 46 “新疆建设兵团第四师到访陕汽,” Weixin Official Accounts Platform, accessed January 25, 2023, https://mp.weixin.qq.com/s?src=11×tamp=1674597752&ver=4309&signature=FC-NXWtMhZJtJP9X1Qjpl8J-aSW1c6VzzymhJFznTs9yu5oH6cnhunAq7eZVivAsfHCDOrq6cc8vT*rZ1doUqZSdC-lIe8vCc1m4uY9roCN8oiWtvuzxMkQB1nwJQQxNh&new=1.
- 47 “As Crackdown Eases, China’s Xinjiang Faces Long Road to Rehabilitation,” Washington Post, September 23, 2022, <https://www.washingtonpost.com/world/2022/09/23/china-xinjiang-crackdown-uyghurs-surveillance/>.
- 48 新疆专用车, “劳动最光荣 劳动最美丽 | 陕汽: 全方位参与开发建设新疆,” Weixin Official Accounts Platform, accessed January 25, 2023, <https://mp.weixin.qq.com/s?src=11×tamp=1674575392&ver=4308&signature=lqNvBKu-YYN4uDioid4esgybrlRrXpLfnsaEhFPaRp5FNjC5ORduchREDmheSoPgA2r8ilrnn-wD4tEWnGlt-kWdsrjpviefnDvO9cAr72CZPvV2JwlIaJueb1ngcOBJ&new=1>.
- 49 “新疆生产建设兵团石河子工程职业技术学院第二阶段扩招招生简章2019,” Weixin Official Accounts Platform, accessed January 25, 2023, https://mp.weixin.qq.com/s?src=11×tamp=1674597752&ver=4309&signature=izEhFMUO*kjMwWoNOLcEy*AeTs*LMMfiCffBqKUA8IUuQLu*CqdNpALgOiWxFf7b38Mko3e-F1o4X-OuqLyeMwUm1HOsKrSU3IDoRvODUEP5tFuSW5AhwFi*.Jpm3jiwTUG&new=1.
- 50 “2019年武威市贫困家庭‘两后生’赴疆委培就业招生简章,” Weixin Official Accounts Platform, accessed January 25, 2023, https://mp.weixin.qq.com/s?src=11×tamp=1674634101&ver=4309&signature=rmE6DKRtxRZdXKfCm*ddVL75omFNzWtDk2-TzouEUmt8PmxE5x238vphnHsS49roKqNJ4uLYAR-kYDFehOteafU-t94sVQ-diw*ebjsnSdG2JM-QewpSQ6CypkDTk2VNq&new=1.
- 51 “2019年武威市贫困家庭‘两后生’赴疆委培就业招生简章.”
- 52 “天津市和平区-甘肃省（东西部协作）2020年就业扶贫线上招聘岗位信息,” Weixin Official Accounts Platform, accessed January 22, 2023, https://mp.weixin.qq.com/s?src=11×tamp=1674403754&ver=4304&signature=vxG6pYiqWS5z7YxY-S47GIfCkUTobh-qJA228WDA05gZ4T2hBVOH*IPL3v8UMJoTK9zph-n5ikIoTHbKHKyY1e-3CaEHypTkcMUyXe5kMDMA-d7CKznDzIosTu2qUtVVI&new=1.
- 53 “天津市和平区对口支援靖远县劳务输转专场招聘会,” Weixin Official Accounts Platform, accessed January 22, 2023, https://mp.weixin.qq.com/s?src=11×tamp=1674403754&ver=4304&signature=Kl*fV3OifjJmKNYtXy4Nd4gHc86HmeQsv7Tup-S81*mFbFUGxHqswDgeiRoMzj2B49SxEwC-NmVq5Ax7FPsEeaqSHGNhiWl6NvKW5VCCGjPzVTr9izahgvr6rbwSadMA4J&new=1.
- 54 “践初心 担使命 勇作为,” Weixin Official Accounts Platform, accessed January 22, 2023, https://mp.weixin.qq.com/s?src=11×tamp=1674403754&ver=4304&signature=L6OSAZda5WaKQUiLgmrV*NpP7RYueicy-4UVPYEsHWP4BCpluXZFqBIUiH6fkHR2SVbhoRdxRYBxsTZzcuNqMCgZpLPDDZvUgaRsd98YA8mESiYyOs-5DeWglI2XCMdFq&new=1.
- 55 “China’s Repression of the Hui: A Slow Boil,” accessed December 31, 2023, <https://thediplomat.com/2021/06/chinas-repression-of-the-hui-a-slow-boil/>.
- 56 “中车大连公司与克诺尔公司深入开展机车检修合作_新闻中心_公司新闻_中车大连机车车辆有限公司,” accessed December 29, 2023, <https://www.crrgc.cc/dl/g8421/s16283/t287556.aspx>.
- 57 “全路和谐机车C6修在厂检修停时工作推进会在中车戚墅堰公司召开,” Weixin Official Accounts Platform, accessed December 29, 2023, https://mp.weixin.qq.com/s?src=11×tamp=1703854681&ver=4986&signature=5THx9Xzq1LEHcNcm3dg7ijqcmhkuURp2vUC-ya4gNqLenicET-LhkO*Up25xjZQhryn4EQl4oBQ-c2681iN-ORkueiQ8MO-P63ik78h*P7v*sKZwecS0iWcMkwcERgYI&new=1.
- 58 “中车兰州机车有限公司 - 企查查,” accessed December 29, 2023, <https://www.qcc.com/firm/85cbb91a-faa169a72f58254189b61d8b.html>.
- 59 “新疆中车新能源装备有限公司 - 企查查,” accessed December 29, 2023, <https://www.qcc.com/firm/40cc904cb-37800f6ce9519adad6639b7.html>.
- 60 “Knorr-Bremse CVS - Commercial Vehicle Joint Venture in China Goes into Operation,” accessed January 20, 2023, https://www.knorr-bremse cvs.com/fr/_meta/pressreleases/press_detail_11776.jsp.

- 61 铸二宣,“罗永——东风公司新疆扶贫点第一名挂职干部!”,Weixin Official Accounts Platform, accessed January 20, 2023, https://mp.weixin.qq.com/s?src=3×tamp=1674233445&ver=1&signature=P-fNU2FWHHYj-kTDAbAnBEUQQ-7roiipu32P-N5KXHj06odrxcnHNSNr9yHP2syGU8TpNNQmstw*dJA*5zAEs3k-hwSgpqsXuOWkPEUaZoHj5D*cE8dMhYFXuyea9sJA3bh2GliN7NtOmsbP7P9CipBmtS2qmsvzxM1iEUe-Q*Kxc=.
- 62 张玲何人民,“【走向我们的小康生活】‘东风’吹拂暖柯坪”,Weixin Official Accounts Platform, accessed January 20, 2023, https://mp.weixin.qq.com/s?src=11×tamp=1674235359&ver=4300&signature=L-g9xz5rDuxJQ9hfsXvhen3VbcTL5ywLgfvqv1ST3vyWq5Eoz9zhboyQNHsKVfXZBrezSLcnEENtmzPRlJfk5klWp-*ClelcAVaSIok2sB-4pVQuxKE614zvBz4x2HDvX&new=1.
- 63 “德国克诺尔集团赴甘谷县调研帮扶项目-今日甘谷-甘谷新闻网-甘谷县人民政府”, accessed January 20, 2023, <http://www.gangu.gov.cn/index.php?m=content&c=index&a=show&catid=33&id=14304>.
- 64 “尼勒克县代表团赴今创集团慰问尼勒克籍务工人员”, accessed January 14, 2023, <http://www.wjyanghu.com/yhw/hotspot/wjxw/2018-07-24/46245.html>.
- 65 武小融,“239名农牧民走出天山|看武进如何援助新疆尼勒克县……”,Weixin Official Accounts Platform, accessed January 14, 2023, <https://mp.weixin.qq.com/s?src=11×tamp=1673681086&ver=4287&signature=1IcZdkTZMhLn26Bm4P5Nm8xHu6lsglCDptXMAABqjXAagBJIIfegVZ7S76cB59kA2aduaszd16xWbwHSIX-wpKofilOvyTewmsfuP6xopYc3NSrCBXA5DnSooSgz7b79Y&new=1>.
- 66 武小融,“投入资金8012万元,实施17个项目|武进援疆工作组冲刺收官年”,Weixin Official Accounts Platform, accessed January 14, 2023, <https://mp.weixin.qq.com/s?src=11×tamp=1673682949&ver=4287&signature=1IcZdkTZMhLn26Bm4P5Nm8xHu6lsglCDptXMAABqjXB2PdGKwk-uOtEb2npx38J6S7gPf-dYnfdwFhN8vz-SxpmEto2RsO4oyFXyTRvEx8coo2xIMARiBTzP8XmpZcn&new=1>.
- 67 “【精准帮扶】劳务协作架虹桥,就业扶贫惠民生”,Weixin Official Accounts Platform, accessed January 14, 2023, https://mp.weixin.qq.com/s?src=11×tamp=1673684044&ver=4287&signature=DsyhB-eqo8x2zHKOQ8OK-56thAvShoniRdxnIoaY8ZoCD3UenE*Y*vytP79J9ntA5dfK1BCwx-3o6IUUz3oAW8*mQoyqaEzTyb*vaYH8oEGE2fouuAiyRcD1x9D9z3Voy&new=1.
- 68 “【精准帮扶】劳务协作架虹桥,就业扶贫惠民生.”
- 69 “□县职教中心苏陕扶贫协作有成效”,Weixin Official Accounts Platform, accessed January 14, 2023, https://mp.weixin.qq.com/s?src=11×tamp=1673684044&ver=4287&signature=ahQ*Cvieswkbv5fo6Tu8ABgD-kISlIkC3wRVONadjTNm8DeGlXorhHKNaNd3h4J8ooX7tCDT*yZwGxzfXPX577aavNRuCDK0dct1B-BI7KxbbzbZV9Qfba5*dNHZ8z6E&new=1.
- 70 “一人上职校 脱贫一家人 勉县职业教育中心组织贫困家庭学生跟岗实习助力教育精准扶贫”,Weixin Official Accounts Platform, accessed January 14, 2023, https://mp.weixin.qq.com/s?src=11×tamp=1673683677&ver=4287&signature=ahQ*Cvieswkbv5fo6Tu8ABgDkISlIkC3wRVONadjTMJ-OMGgBoEfa-BHkBa6CnD9uPWR8IyGerupOE1hs24HtkyXr1qBKHr2jco-nO-jogcWp0WcB2jKjxSycg-HkKe&new=1.
- 71 “一人上职校 脱贫一家人 勉县职业教育中心组织贫困家庭学生跟岗实习助力教育精准扶贫.”
- 72 “DAQO GROUP,” accessed January 25, 2023, https://en.daqo.com/News/news_detail/id/3272.html.
- 73 Kenneth Rapoza, “China Solar Stocks Rise by 10%-Plus After Not Making Forced Labor List,” Coalition For A Prosperous America (blog), June 21, 2022, <https://prosperousamerica.org/china-solar-stocks-rise-by-10-plus-after-not-making-forced-labor-list/>.
- 74 Rapoza.
- 75 “月薪4500元-5500元!五险一金!新疆大全新能源股份有限公司紧急招人啦!【石河子招聘网】”,Weixin Official Accounts Platform, accessed January 25, 2023, <https://mp.weixin.qq.com/s?src=11×tamp=1674657321&ver=4310&signature=phQuAZx5NddYYoOJTYRE9XXqtxqNEvnQEHGJDaB6NxoKBOTi-bjxoCoT-TDGd7zEqQtuqCNTjoUQbulBi-iDFLOEOrwd4j1dDIQnqvJM-p6ukGOW2ZiPipCrojTeIdeOm&new=1>.
- 76 “New Report Reveals the PV Industry’s Deep Ties to Forced Labor - Human Trafficking Search,” accessed December 27, 2023, <https://humantraffickingsearch.org/resource/new-report-reveals-the-pv-industrys-deep-ties-to-forced-labor/>.
- 77 “Zhenjiang Siemens Busbar Trunking Systems Co., Ltd_Bus Series,Switch Cabinet Series,” accessed January 25, 2023, <https://en.zsb-daqa.com/>.
- 78 Rapoza, “China Solar Stocks Rise by 10%-Plus After Not Making Forced Labor List.”
- 79 Rapoza.
- 80 “月薪4500元-5500元!五险一金!新疆大全新能源股份有限公司紧急招人啦!【石河子招聘网】.”
- 81 “New Report Reveals the PV Industry’s Deep Ties to Forced Labor - Human Trafficking Search.”
- 82 “要闻|成县党政考察团考察青岛威奥轨道股份有限公司并看望慰问该公司成县籍员工”,Weixin Official Accounts Platform, accessed January 21, 2023, https://mp.weixin.qq.com/s?src=11×tamp=1674339312&ver=4303&signature=q9UHTxoW94fA8O2jxla*awyjtQoYyWbTjMXzS8QKPOq2UgE2KyJwAwlA9xrcYOgtY6EtiNzd-hx04W5ggVp9pms2YQhyw*HxKhh2oRF92f8Wdz*ofLIRRPYOALXuokOOB&new=1.
- 83 “千里结远亲 劳务促共赢——成县劳务协作考察团赴青岛市城阳区考察工作纪实(一)”,Weixin Official Accounts Platform, accessed January 21, 2023, https://mp.weixin.qq.com/s?src=11×tamp=1674339032&ver=4303&signature=oS5sMhXK4h-YfWxn17ybWfVxahXGOX5*r7s3G-tgvdpegksnI-Px-b191JYovYusgVoMoenF7i1hgVZOcK*4Td4uSZxpz4F9ABGMUdhxlspK8leMIWEteSb1C8a1MHB6&new=1.

- 84 “曹永先罗刚带领考察团到青岛市黄岛区、西海岸新区考察对接劳务输转工作,” Weixin Official Accounts Platform, accessed January 21, 2023, <https://mp.weixin.qq.com/s?src=11×tamp=1674339150&ver=4303&signature=wCV2WHEwx02Ux7SQ1RRUsD3zcWYx7oDZCsf64i1jcEwI2Y5lLRCDwwjIVLopnN2pPS8v-Nnxeg8QfS32E71MSBkITAeEWTmOQLxoH7m3jrMolrHSfWlaUtsjEyPgNyq26&new=1>.
- 85 “成县青岛合作共赢 劳务协作精准扶贫,” Weixin Official Accounts Platform, accessed January 21, 2023, https://mp.weixin.qq.com/s?src=11×tamp=1674339213&ver=4303&signature=io*zTom2PkhCFa1BwrixfqNxKmGbUQ9Fq1WpbKivSH2jrO8Jl9*KmuEP*yJy-d2puvE3eC1fZoJ6V3plstvgd9WXqirdldiqWL4b6d43kHufSoQKOq-q2XCQ15fHbGIm&new=1.
- 86 “新闻 | 我院与青岛威奥轨道集团举行校企合作签约仪式,” Weixin Official Accounts Platform, accessed January 21, 2023, https://mp.weixin.qq.com/s?src=11×tamp=1674339372&ver=4303&signature=-XgK4OwOorwnjX*iv3A5VIDPVfam-ZVcja7JMtuI*n7RV6jaIqJNB-nNCLk*11R3-l2RRNJs3qYd-t*o3slng3Nddd6RfcYCzsMSdxSrnQuoiHmOYWEqGycTzri5jv-Wwf&new=1.
- 87 “新闻 | 我院与青岛威奥轨道集团举行校企合作签约仪式.”
- 88 “Sustainability | Voith,” accessed March 13, 2023, <https://voith.com/corp-en/about-us/sustainability.html>.
- 89 “2019-06-07 VT Voith and China Railway Rolling Stock Corp (CRRC) Form Joint Ventures in China | Voith,” accessed December 31, 2023, https://voith.com/corp-en/news-room/press-releases/2019-06-07_vt_voith-and-china-railway-rolling-stock-corp-crrc-form-joint-ventures-in-china.html.
- 90 “德国福伊特连续7年参加新疆煤博会,” accessed January 17, 2023, <http://news.sina.com.cn/c/2013-02-19/162126300950.shtml>.
- 91 “Committee on the Elimination of Racial Discrimination Reviews the Report of China,” OHCHR, accessed December 28, 2023, <https://www.ohchr.org/en/press-releases/2018/08/committee-elimination-racial-discrimination-reviews-report-china>.
- 92 “China’s Algorithms of Repression,” Human Rights Watch, May 1, 2019, <https://www.hrw.org/report/2019/05/01/chinas-algorithms-repression/reverse-engineering-xinjiang-police-mass>.
- 93 Frederik Kraft, “User Research in a Chinese Coal Mine,” Voith Innovation Lab (blog), September 20, 2019, <https://medium.com/voith-innovation-lab/user-research-in-a-chinese-coal-mine-afb79b7c373b>.
- 94 Fredrik Kraft. 2019.

