

## **TOLLING OPERATIONS IN ACCOUNTING**

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**Abstract:** Tolling operations in accounting represent a specific type of contractual arrangement where raw materials or semi-finished goods are provided to a manufacturer (toller) for processing, with the final product returned to the customer. This arrangement is widely used in industries such as metallurgy, oil refining, and textiles, where specialized equipment or expertise is required. From an accounting perspective, tolling operations introduce unique challenges, including the proper recording of transactions, cost allocation, and revenue recognition. This paper explores the accounting principles and standards applicable to tolling operations, highlighting their impact on financial reporting and enterprise management. The study emphasizes the importance of accurate documentation, compliance with legal frameworks, and effective internal controls to ensure transparency and efficiency in tolling operations.

**Keywords:** Tolling operations, accounting principles, cost allocation, revenue recognition, financial reporting, internal controls, contract processing, specialized manufacturing, enterprise management.

## **INTRODUCTION**

The term "tolling" finds its roots in the English language and traditionally referred to payments made for services related to the processing of raw materials provided by a customer. Historically, this term was closely associated with the processing of mineral raw materials, which served as the foundation for its original usage. However, as industries evolved and economic activities diversified, the concept of tolling expanded beyond its initial scope. It now encompasses a more comprehensive production framework that involves not only the processing of raw materials but also the marketing of the resulting products and the organization of financial settlements associated with these goods.

Today, tolling operations are widely employed across various sectors of the economy, making them an integral part of industrial and trade practices. They have found significant applications in areas such as the production and processing of excisable goods, agricultural operations involving customer-supplied raw materials, and foreign trade activities. Tolling is also prevalent in specialized industries, including ferrous and non-ferrous metallurgy, the processing of precious metals, and even the production of alcoholic beverages. These operations are characterized by their versatility and adaptability to the specific requirements of different industries, highlighting their importance in modern economic systems.

A key term frequently encountered in discussions of tolling operations is "tolling raw materials." This refers to materials supplied by a customer under a tolling agreement, where the processor undertakes specific tasks as outlined in the contractual arrangement. These materials are typically recorded off-balance-sheet in the processor's accounting system at the agreed-upon prices specified in the contract. This accounting treatment ensures that ownership of the materials remains firmly with the supplier throughout the processing period. The processor, on the other

hand, does not assume ownership but focuses on performing the agreed-upon services, whether it involves transforming, refining, or enhancing the materials.

The concept of tolling raw materials is particularly important because it introduces specific legal, regulatory, and tax implications. The relationship between the supplier and the processor is governed by a set of clearly defined rules and responsibilities that must align with national laws and international trade regulations. For example, the processor is obligated to ensure the quality and efficiency of the services rendered while adhering to contractual terms. Simultaneously, the supplier retains the right to monitor the progress of processing and ensure compliance with agreed-upon standards.

The legal framework surrounding tolling agreements is designed to provide clarity on critical aspects such as ownership rights, risk allocation, and the distribution of responsibilities between the parties involved. These agreements are typically structured to ensure that both the supplier and the processor are protected against potential disputes. They also provide guidelines for addressing issues such as material wastage, storage of processed goods, and the transfer of finished products back to the supplier.

Furthermore, tolling operations bring into focus the intricate relationship between legal requirements and accounting practices. The recording and reporting of tolling transactions must adhere to established accounting standards, such as those outlined in the Chart of Accounts. This ensures transparency and accuracy in financial reporting while facilitating compliance with tax regulations. For instance, the supplier's accounting system must reflect the movement and processing of raw materials, while the processor's system must accurately document the costs incurred and revenues generated from the tolling services.

### **METHODS**

The study employs a review-based methodology, analyzing relevant legal frameworks, accounting standards, and practical implementations of tolling operations. Data were gathered from regulatory documents, academic literature, and industry practices to explore the nuances of tolling agreements. Particular emphasis was placed on examining the accounting processes for both suppliers and processors, including off-balance-sheet recording, cost allocation, and compliance with the Chart of Accounts (21st edition). The study also evaluated legal aspects of tolling contracts, such as risk transfer, pricing mechanisms, and ownership rights, to provide a comprehensive understanding of tolling operations.

### **ANALYSIS**

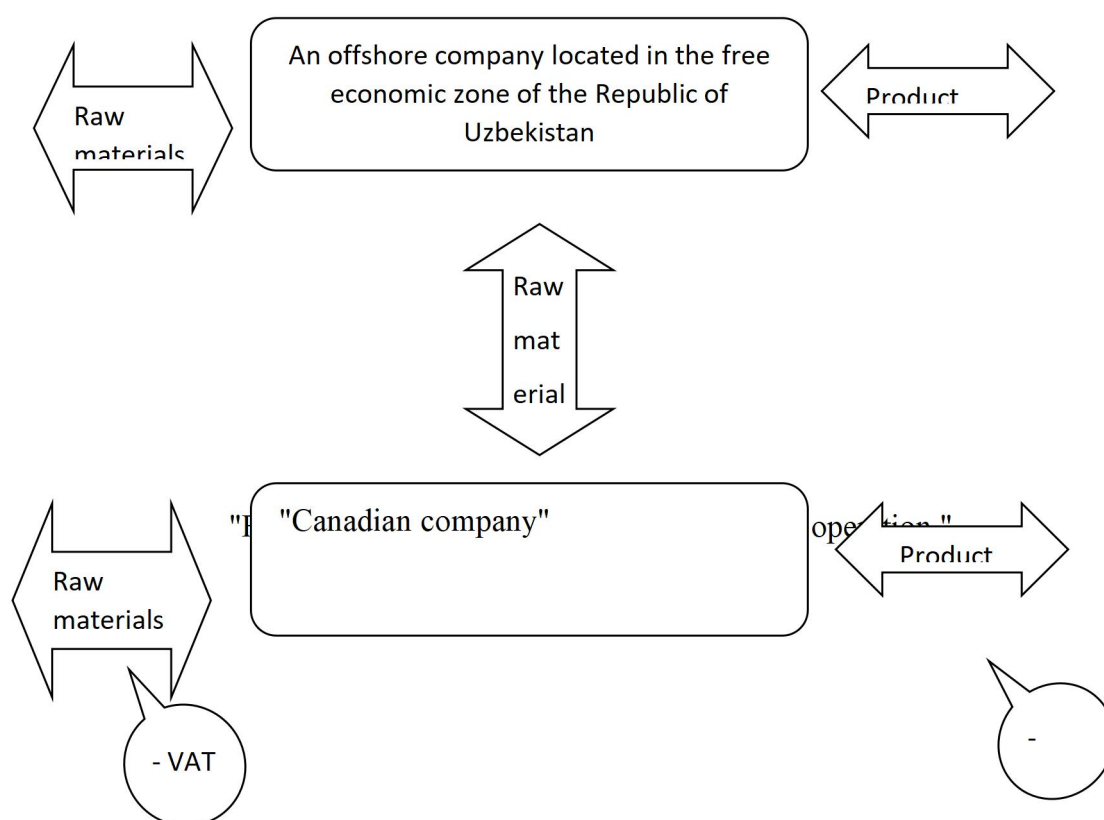
Tolling operations represent a specialized arrangement in which raw materials provided by a customer are processed under a contractual agreement. A defining characteristic of these operations is that ownership of the raw materials remains with the supplier throughout the processing period. This unique structure introduces several legal, financial, and operational considerations that must be addressed to ensure the smooth execution of tolling arrangements.

At the core of tolling operations lies the subcontracting agreement, which serves as the legal foundation for the relationship between the supplier and the processor. Under this agreement, the processor, acting as a subcontractor, undertakes specific tasks related to the transformation or enhancement of the raw materials provided by the supplier. The terms of the contract outline critical elements such as the scope of work, timelines, quality standards, and the allocation of risks between the parties. Notably, the supplier retains ownership rights to the raw materials and, consequently, to the processed goods. This distinction is fundamental to the legal and financial structure of tolling operations.

The allocation of risks and responsibilities is a central consideration in tolling agreements. The processor assumes responsibility for the quality and efficiency of the processing work, as well as for safeguarding the raw materials and any resulting waste. On the other hand, the supplier bears

the risk of material loss or damage unless the contract specifies otherwise. These provisions are typically governed by the Civil Code, which categorizes tolling agreements as a form of subcontracting rather than a standalone contract type.

From an accounting perspective, tolling operations require a meticulous and systematic approach to ensure compliance with financial regulations and standards. For the supplier, the raw materials supplied for processing are recorded in account 1070, labeled "Materials Provided for Processing by Other Parties." This account captures the movement of materials, their processing status, and any associated costs. When the processed materials are returned to the supplier, their value is transferred to the appropriate production or inventory accounts, reflecting their readiness for use or sale.



The processor, in contrast, employs off-balance-sheet accounts to record the receipt and processing of tolling raw materials. Account 003, "Materials Accepted for Processing," is used to document the raw materials and their status throughout the processing period. Additionally, the costs incurred during processing—such as labor, depreciation, and overhead—are recorded in production cost accounts. This dual-accounting approach ensures that the processor maintains transparency in tracking expenses while distinguishing tolling activities from its own production operations.

One of the key advantages of tolling operations is their ability to facilitate cost efficiency and resource optimization. By outsourcing processing tasks to specialized processors, suppliers can focus on core activities such as raw material procurement and product marketing. Conversely, processors benefit from steady revenue streams generated through tolling services without the need to invest in raw material procurement.

However, these arrangements also present challenges, particularly in the areas of compliance and financial reporting. The intricate relationship between legal requirements, tax regulations, and

accounting standards necessitates a high level of expertise and attention to detail. For instance, the supplier must accurately calculate and record value-added tax (VAT) on tolling services, while the processor must ensure proper documentation of all costs and revenues associated with the agreement.

In summary, tolling operations involve a complex interplay of legal, financial, and operational elements. The success of these arrangements depends on clear contractual terms, rigorous accounting practices, and strict adherence to regulatory requirements. By addressing these considerations, tolling operations can serve as an effective mechanism for achieving cost efficiency, enhancing productivity, and fostering collaborative partnerships between suppliers and processors.

### **RESULTS**

The research revealed several significant findings that highlight the unique characteristics and operational intricacies of tolling agreements.

**Ownership Retention.** One of the most distinguishing features of tolling agreements is the retention of ownership rights by the supplier over the raw materials provided for processing. This characteristic sets tolling apart from conventional production processes, where ownership typically transfers to the processor. The supplier's continued ownership ensures that the processor's role is limited to executing the tasks outlined in the agreement, without assuming control over the materials or the resulting products.

**Legal Frameworks.** The legal basis for tolling operations is grounded in subcontracting agreements, as defined by the Civil Code. These agreements establish the obligations of both the supplier and the processor, emphasizing the importance of clearly defined terms. Key elements include the transfer of risk during material handling, pricing mechanisms for processing work, and adherence to quality standards. The study underscores the necessity for precise contractual provisions to minimize disputes and ensure operational efficiency.

**Accounting Practices.** Distinct accounting practices are employed by suppliers and processors to reflect their respective roles in tolling operations. For suppliers, raw materials provided for processing are recorded in account 1070, labeled "Materials Provided for Processing by Other Parties." This account tracks the movement of materials and the costs associated with processing. Processors, on the other hand, use account 003, an off-balance-sheet account, to record materials accepted for processing. The processing costs, including labor, depreciation, and overhead, are systematically documented in production accounts. This dual-accounting approach ensures accurate financial reporting and transparency in tolling transactions.

**Tax Implications.** Tolling operations involve specific tax considerations, particularly in the context of value-added tax (VAT). VAT is applied to the processing services rendered by the processor, requiring both parties to maintain accurate tax records and ensure timely compliance. The study highlights the critical role of tax regulations in tolling operations, as non-compliance can lead to financial penalties and operational disruptions.

These findings provide a comprehensive understanding of the operational, legal, and financial dimensions of tolling agreements, offering valuable insights for businesses engaged in such arrangements. By addressing ownership retention, legal frameworks, accounting practices, and tax implications, tolling operations can be effectively managed to achieve organizational goals and ensure compliance with regulatory requirements.

### **DISCUSSION**

Tolling operations serve as a strategic approach in various industries, enabling businesses to optimize resource utilization and streamline production processes. By allowing suppliers to retain ownership of raw materials throughout the processing stages, tolling arrangements provide a level



of control that mitigates the risks typically associated with outsourcing. This structure ensures that suppliers maintain authority over their resources while benefiting from the expertise and capabilities of specialized processors.

The retention of ownership rights is particularly advantageous in sectors requiring high-value or sensitive raw materials, as it reduces the risk of loss or misuse. However, this benefit is accompanied by a heightened need for robust legal and accounting frameworks to govern the terms of tolling agreements. Clearly defined contractual provisions, such as those regarding risk transfer, quality assurance, and pricing, are crucial to safeguarding the interests of both suppliers and processors.

From an accounting perspective, tolling operations require meticulous documentation to ensure compliance with the Chart of Accounts and applicable financial regulations. The use of specific accounts, such as account 1070 for suppliers and account 003 for processors, facilitates accurate tracking of raw materials, processing costs, and financial transactions. These practices not only enhance transparency but also minimize the likelihood of disputes or financial irregularities arising from mismanagement or miscommunication.

The economic advantages of tolling are significant. Suppliers can leverage the specialized expertise of processors without the need for substantial capital investments in production infrastructure. This arrangement allows businesses to focus on core competencies while outsourcing non-essential functions. Processors, in turn, benefit from steady revenue streams generated by providing their services.

Despite these benefits, challenges persist in aligning accounting practices with evolving legal requirements. Differences in regulatory frameworks across jurisdictions can complicate tolling operations, particularly in cases involving international trade. Ensuring consistent and transparent financial reporting remains a key concern, as inaccuracies can lead to compliance issues and reputational risks.

Future research could explore the role of technological advancements in addressing these challenges. Innovations such as blockchain technology, integrated accounting software, and automated compliance tools have the potential to enhance the efficiency and reliability of tolling operations. By streamlining processes and improving data accuracy, these technologies could reduce administrative burdens and facilitate better regulatory compliance, ultimately supporting the sustainable growth of tolling practices across industries.

## **CONCLUSION**

Tolling operations represent a specialized domain within accounting and production, requiring robust legal and financial frameworks. By retaining ownership rights, suppliers can exercise greater control over raw materials while benefiting from the expertise of processors. The integration of accurate accounting practices, legal compliance, and efficient resource management ensures the success of tolling arrangements. This study underscores the importance of precise contractual terms, adherence to accounting standards, and proactive management to optimize tolling operations in a competitive economic landscape.

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