Transportation Costs and Competitiveness of Eastern Canada Lumber in GCC Markets

Prepared for:
Natural Resources Canada

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Quality Assurance

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# Acronyms / Abbreviations

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<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>CFQG</td>
<td>Chemins de Fer Quebec-Gatineau</td>
</tr>
<tr>
<td>CN</td>
<td>Canadian National</td>
</tr>
<tr>
<td>CP</td>
<td>Canadian Pacific</td>
</tr>
<tr>
<td>dwt</td>
<td>Deadweight Tonnage</td>
</tr>
<tr>
<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
</tr>
<tr>
<td>GCC</td>
<td>Gulf Cooperation Council</td>
</tr>
<tr>
<td>MENA</td>
<td>Middle East North Africa</td>
</tr>
<tr>
<td>MFBM</td>
<td>Thousand Board-Feet</td>
</tr>
<tr>
<td>MSC</td>
<td>Mediterranean Shipping Company</td>
</tr>
<tr>
<td>OHBC</td>
<td>Open Hatch Bulk Carrier</td>
</tr>
<tr>
<td>SPF</td>
<td>Spruce-pine-fir</td>
</tr>
<tr>
<td>TEU</td>
<td>Twenty-foot Equivalent Unit</td>
</tr>
<tr>
<td>UAE</td>
<td>United Arab Emirates</td>
</tr>
<tr>
<td>USD</td>
<td>United States Dollars</td>
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Executive Summary

This study focuses on the transportation costs and competitiveness of the supply chains used by Eastern Canadian suppliers of wood products to countries of the Gulf Cooperation Council (GCC), namely Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates (UAE). It aims to inform Canada’s GCC market development strategy. Transportation costs represent a very significant portion of total landed costs of lumber to GCC markets; thus Canada’s transportation competitiveness relative to other key importers is critical.

Moreover, the challenges related to the level of transportation costs are exacerbated by a number of other supply chain and market limitations, including the limited availability of empty containers at inland points of production, no direct liner service out of Montreal to the GCC, a low level of responsiveness due to high transit times, a fragmented distribution approach, marketing-related perceptions of Canadian products, and the overall profitability of serving the GCC market when compared to the North American market.

Market Opportunity

This study focuses on the containerized key Canadian wood product imports of the GCC, namely coniferous (softwood) sawnwood and non-coniferous (hardwood) sawnwood of which Eastern Canada (defined as Ontario, Quebec, and Atlantic Canada) has 2% and 4% of the market, respectively.

Figure ES-1.1: Market Share of GCC Imports by Value for Coniferous and Non-Coniferous Sawnwood, 2010

Source: FAOStat Forestry Database and Industry Canada Trade Data Online
For both product categories, Romania and Northern European countries (Germany, Austria) have large market shares. Chile and Scandinavian countries (Sweden, Finland) are also strong players in the softwood market in the GCC\(^1\). As a result, these countries were chosen for comparative supply chain and transportation cost analysis.

Eastern Canada has room to grow in the GCC market, though the market remains comparatively small relative to Canada’s lumber export portfolio. Indeed, if Canada had been able to capture the entire sawnwood market in the GCC in 2010, its total worldwide exports for these products would have been 19% higher than they otherwise were.

The opportunity is growing, however, with GCC markets growing in recent years and all indications pointing to further growth in the future. Most notably, construction in Saudi Arabia and the United Arab Emirates (UAE) is expected to grow at near double-digit rates in the coming few years. However, the resurgence of the U.S. housing market and rise in Asian demand are pushing up the price that can be fetched for lumber domestically, hampering the relative profitability of other overseas markets, including the GCC. Overall, there seems to be scope for Eastern Canada to grow both its softwood and hardwood exports to the GCC, though the opportunity is constrained by both market and logistical hurdles.

Supply Chain Review and Transportation Cost Competitiveness

The main destination ports of entry for Eastern Canadian wood product exports to the GCC are Jebel Ali, UAE, and Jeddah, Saudi Arabia. Eastern Canadian suppliers of wood products overwhelmingly ship via Montreal with transhipment in Northern Europe, as no direct service is offered. Competitor nations use a variety of routes and transhipment options, with most favoured configurations involving transhipment. Table ES-2 summarizes key findings from the supply chain analysis.

Eastern Canada producers face much longer transit times than all other competitors, with the exception of Chile. Ocean rates are significantly higher than producers in Germany, Austria and Romania. Rates from Finland, Sweden and Chile were roughly competitive with those from Montreal. It is also worth mentioning that Chilean producers sometime use breakbulk (non-containerized) shipping, which is much faster and can also be more economical, although this was not costed.

Finally, Eastern Canada also faces generally higher inland costs than its competitors. Hence, the analysis points to a slight transportation cost disadvantage for Eastern Canada producers compared to all competitors, with the degree varying depending on producer location relative to port of export. Of course, this analysis does not take into account quality differences, nor does it account for production costs differences.

\(^1\) Malaysia also competes in the non-coniferous wood market, but its products are fundamentally different, and hence we do not include that country in our comparative analysis.
Figure ES-1.2: Comparative Transportation Costs and Transit Time

<table>
<thead>
<tr>
<th></th>
<th>Jebel Ali, UAE</th>
<th>Jeddah, Saudi Arabia</th>
<th>Inland Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ocean Rate</td>
<td>Transit Time (days)</td>
<td>Ocean Rate</td>
</tr>
<tr>
<td>Eastern Canada</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>via Montreal</td>
<td>$1,880</td>
<td>33-37</td>
<td>$1,900</td>
</tr>
<tr>
<td>via Halifax</td>
<td>$2,200</td>
<td>22</td>
<td>$2,200-$2,400 (est.)</td>
</tr>
<tr>
<td>Key Competitors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Romania</td>
<td>$1,240</td>
<td>35-37</td>
<td>N/A</td>
</tr>
<tr>
<td>Austria/ Germany (South)</td>
<td>$1,250 to $1,350 (est.)</td>
<td>21</td>
<td>$1,050 to $1,150 (est.)</td>
</tr>
<tr>
<td>Germany (North)</td>
<td>$1,300-$1,400</td>
<td>20</td>
<td>$1,800 (est.)</td>
</tr>
<tr>
<td>Sweden</td>
<td>$1,700-$1,850</td>
<td>27</td>
<td>N/A</td>
</tr>
<tr>
<td>Finland</td>
<td>$1,750-$1,900</td>
<td>28</td>
<td>N/A</td>
</tr>
<tr>
<td>Chile (Panama/East Coast Route)</td>
<td>$1,800-$2,000 (est.)</td>
<td>50/30</td>
<td>$1,900 to $2,100 (est.)</td>
</tr>
<tr>
<td>Chile (Breakbulk)</td>
<td>16-20 days to Fujairah, Oman</td>
<td></td>
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Source: CPCS analysis of a variety of sources

Bottlenecks, Irritants and Other Limiting Factors

A number of factors limit the growth in exports to the GCC, most notably:

- **Unavailability of (economical) empty containers at the mill**: This limits potential savings by producers that would prefer to use cheaper mill labour to stuff containers. In view of the operational preferences of international shipping lines to keep their containers on ships rather than inland, this dynamic is unlikely to change.

- **No direct liner services between the Port of Montreal and GCC**: Leads to higher transit time due to transhipments, as well as higher supply chain risks (more stakeholders). Shipping to the GCC via the port of Montreal requires transhipment in Northern Europe. While prices remain competitive, this increases transit times, and also increases supply chain risks since more stakeholders are involved. Higher transit times also typically translate to higher inventory costs for the importer.

- **Limited responsiveness by producers**: Higher transit times and limited volumes mean that Eastern Canada producers cannot fulfill requests with short lead times. While Eastern
Canada producers can lower the transit time by using Maersk service out of the port of New York/New Jersey, the cost premium is high and the transit time gained is limited.

- **Fragmented market:** For the volumes shipped by Canada, the supplier and end-user market is fragmented. A handful of known exporters each ship small volumes directly or via trading houses in Canada to disparate buyers in the GCC. Canada does not have a single-window to collect market intelligence for producers and serve GCC customers.

- **Perception of quality:** Swedish and Finnish products have an aesthetic advantage, which translates into a price advantage (as much as $10-$15 per m$^3$), while Canadian product cannot translate its technical advantage (higher strength) into a price premium.

**Conclusions**

There is clearly a general cost disadvantage for Eastern Canada producers. Indeed, Canada’s inland costs are the highest of the countries surveyed, and container rates are significantly higher than those from Romania, Germany and Austria. Finland and Sweden are on par with Canada, and Chile is slightly more expensive, although some of its producers also use breakbulk shipping, which is generally cheaper.

Transportation (excluding input transportation) in general makes up a very large component relative to total landed cost of product, with logistics costs comprising 25-30% of product value for Eastern Canada’s lumber. This share is generally slightly lower for competitors, and can be roughly estimated at as low as 15%-17% for Romania (or an advantage of about $20 to $35 per m$^3$). Other competitors are generally more in the 20% to 30% range, with Canada’s cost disadvantage in a much more narrow range ($0 to $20).

Resurgence in the U.S. market is straining profitability of overseas markets, and producers have said exports are making negligible or no margin on their product simply to maintain trade relationships. If diversification is the goal, a unified strategy will bear the best fruit.

**Recommendations**

Following our competitors’ example, Canada needs a single window to consolidate Eastern and Western Canadian products, hard and softwood and all dimensions. This has the potential to generate economies of scale and focus transportation, marketing and information management efforts in the region. Leaders in industry could pool resources to establish a cooperative sales company. This would allow for augmented and concentrated marketing efforts, and would create gravity to draw producers together. Contribution from government to support this effort could aid its effectiveness, insofar as it is seen in national best interest to deepen trade ties with the GCC, similar to the inroads made in Asia in recent years. Participating commercial interests could also be required to make minimum volume commitments to ensure the reliability of supply from a customer’s perspective.
More on the ground relationship building in the GCC to shape perceptions of quality of Canadian wood products could also be pursued, and economically so with all partners collaborating in this effort.

Jebel Ali is the major wood product import gateway for the GCC; because of its economies of scale it is a preferred and cost-effective port for lumber. On the other hand, Saudi Arabia is the largest market for lumber in the GCC. More information would thus be needed to make an informed choice about the optimal location to base operations in the region.
1

Introduction
1.1 Background

Understanding the transportation cost and overall competitiveness of the supply chains used by Canadian suppliers of wood products to countries of the Gulf Cooperation Council (GCC) is essential to better guide market development strategies and to gauge the level of resources that should be spent by wood producers and the Government of Canada in developing this market. With transportation costs representing an important portion of landed costs of wood products to these markets, the issue is even more important relative to products where transportation costs comprise a smaller share of the good’s total landed costs.

Moreover, the challenges are not only related to the level of transportation costs, but also the variability of these costs, the availability of empty containers and the overall profitability of GCC markets when compared to other export markets. The overall competitiveness of Eastern Canadian wood products relative to other regions supplying wood products to the GCC is also central to the opportunity that this market represents for Eastern Canadian wood products exporters.

1.2 Objectives

The focus of the report is to establish the position of Eastern Canada wood product suppliers to GCC countries, assess their transportation costs compared to key competitors and to identify other supply chain bottlenecks or irritants that may hinder market access for these suppliers. Since Eastern Canadian wood product exports are generally shipped to GCC markets in containers, the focus of this report is on the transportation costs and competitiveness of containerized wood product exports to the GCC. This analysis aims to provide a good overview of the extent to which, given the transportation realities observed, the GCC market represents a significant opportunity for Canadian suppliers.

1.3 Project Structure

The project was developed in five broad steps, as set out in Figure 1.1. This report presents the analysis conducted throughout these five steps.
1.4 Methodology

This report relied heavily on consultations with key players in the supply chain of Canadian wood products into the Middle East, including shippers, industry associations, freight forwarders and trade commissioners, to name a few. The information gathered through these consultations and requests included both qualitative (market understanding) and quantitative (rates, transit times). In some cases, rates were also obtained through online quotes for particular routes. In total, CPCS reached out to over 15 stakeholders, conducted eight in-depth interviews and obtained rate information from several stakeholders, both in shipping and as service providers.

In terms of trade data, key sources were the FAOStat Forestry Database and the Industry Canada trade database. Data from FAOStat were available up to 2010. For the purpose of this report, data on reported imports to the GCC from each country were used\(^2\). Data for some GCC countries were available for 2011. Whenever possible, data for 2011 are also reported. Canadian trade data were available up to 2012. They were used mainly to differentiate

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\(^2\) There can be discrepancies between the sum of reported exports by an export country and the total reported imports by the import country. In an attempt to reconcile imports and exports, FAOStat does adjust totals. In order to measure market shares, import data to the GCC from Canada and its key competitors, as reported by FAOStat, were used. The market share was obtained by dividing imports by the unadjusted total of imports to the GCC, so as to avoid a total of market shares well below or above 100%. It is useful to note that these data were roughly in line with Canadian exports as reported by the Industry Canada Trade Database.
Eastern Canada and Western Canada exports from Canada to the GCC. Shipping statistics from Statistics Canada were also used to validate selected findings.

Finally, it is worth noting that almost all cost data are denominated in U.S. dollars. In some cases, costs were in Canadian dollars (e.g. inland costs in Canada), but given that the currencies are presently close to parity, they can be treated similarly.

### 1.5 Limitations

Third-party data and market intelligence were utilized and, while vetted and portrayed as accurately as possible by CPCS, we cannot warrant their completeness or accuracy.

Also, the GCC states have incomplete record keeping relative to many shipper nations and discrepancies were often found between reported exports (Canada, U.S., Europe, etc.) and reported GCC imports. It was confirmed in consultation that this is typically the case, and it is difficult for external parties to retrieve accurate records from outside the area.

Finally, it is important to note that container shipping rates are inherently volatile. Rates provided in this report reflected the situation as it stood in early 2013. They should not, however, be used to infer long-term rates for these different origins and destinations.

### 1.6 Organization of this Working Paper

The remainder of this Final Report is organized in five chapters:

- Chapter 2: Assessment of Market Opportunity
- Chapter 3: Supply Chain Review and Transportation Cost Competitiveness
- Chapter 4: Conclusions and Recommendations

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3 Data on Canadian trade with the GCC from FAOStat is not always consistent with trade data from Industry Canada. We rely mainly on data from FAOStat when we compare Canada to its competitors, and on Industry Canada trade data when we analyse Canada’s context.
2 Assessment of Market Opportunity

Key Messages

GCC imports three key wood product categories: coniferous (softwood) sawnwood, non-coniferous (hardwood) sawnwood and wood panels.

Eastern Canada has 2% of the coniferous sawnwood market in the GCC, and 4% of the non-coniferous market.

For both product categories, Romania, Scandinavian countries (Sweden, Finland) and Northern European countries (Germany, Austria) have large market shares. Chile is also a strong player in the softwood market in the GCC. As a result, these countries were chosen for detailed supply chain analysis to benchmark Eastern Canadian positioning for lumber exports to the GCC.

Canada appears unable to compete for wood panels, a market dominated by low-cost manufacturing countries (e.g. China, Thailand) located in closer proximity to GCC markets. As a result, no further analysis is conducted for these products.
2.1 Size and Key Products of GCC Import Markets

The GCC is a political and economic union of six Arab states bordering the Persian Gulf, namely Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates (UAE). Three product markets (which, of course, be further subdivided) account for the majority share of wood product imports to the GCC:

- **Sawnwood products made of coniferous wood**, which are often referred to as softwood or spruce-pine-fir (SPF) products. These products include planks, beams, joists, boards, rafters, scantlings, laths, boxboards and lumber. In the GCC, construction products (forming) represented the vast majority of the market. In 2010, GCC imports of these products totalled 2.6 million cubic metres, for an estimated value of USD670 million (average price of about USD260 per cubic metre) (Figure 2.1).

- **Sawnwood products made of non-coniferous wood**, which are often referred to as hardwood products. These products in the GCC tend to be used more in joinery or furniture manufacturing than softwood products. In 2010, GCC imports of these products totalled 960,000 cubic metres, for an estimated value of USD560 million (average price of about USD580 per cubic metre).

- **Wood-panel products**, which include fibreboard, particle board, plywood and veneer sheets made of either soft or hard wood. These markets are held by low-cost manufacturing countries. In 2010, GCC imports of these products totalled 2.0 million cubic metres, for an estimated value of USD1 billion (average price of about USD500 per cubic metre).

![Figure 2.1: Value of Imports of Wood Products by GCC, 1998-2010](image)
In total, imports of all three product categories in 2010 represented a total of 5.6 million cubic metres, for an estimated value of USD2.2 billion. The largest GCC market is undoubtedly Saudi Arabia (58% in terms of value), followed by the UAE (24%) and Oman (7%) (Figure 2.2). Jordan and Egypt are also large markets in close proximity to the GCC.

Finally, it is worth mentioning that the value of imports to the GCC has been trending upwards over the last decade, with available estimates also suggesting limited, but positive, growth for 2011 and 2012. The main product of relevance for Canada, coniferous sawnwood, has seen an increase of nearly fourfold between 1998 and 2010.

![Figure 2.2: Proportion of Wood Product Import Market by GCC Country, 2010](source: FAOStat Forestry Database)

### 2.2 Canada’s Export Context

At present, GCC countries are a relatively small market for Canadian wood products, representing roughly $35-$65 million in lumber and wood panels exports for Canada per year, according to Industry Canada trade data (Figure 2.3). After an uptick in 2010, the value of these exports declined in 2011 and 2012, despite a growing GCC market. The market peak of 2007 for Canadian exports to the GCC ($65.5 million) has not been reached since then. The vast majority of these exports are softwood lumber products (88% of value in 2012), with hardwood products representing only 10%. Wood panels are not a significant export to the GCC (2%).

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4 Partial data for 2011 from FAOStat indicates growth in major GCC markets. For example, imports of sawnwood to Saudi Arabia and the UAE have grown 2.3% and 15.5% respectively. Stakeholders consulted have mentioned that growth has continued in 2012, but no data are available.
The region as a whole comprises a very small portion of Canada’s entire lumber exports (0.9% in 2012 in terms of value). Indeed, the U.S. still represents the large majority of Canada’s exports, though between 2007 and 2011 its share declined from over 75% to less than 60% (Figure 2.4).

What’s key to note is the sharp increase in export volumes to China. While Japan has remained a relatively stable market for Canada’s exports, China has increased its import volumes tenfold from just over $130M to over $1.1B from 2007 to 2011. This diversification of trade partners played a crucial role in absorbing the excess capacity in Canadian production.
resulting from the U.S. demand crash in the late 2000s. These exports have largely been from B.C.

It’s with a similar intent of market diversification that Eastern Canada’s producers are looking to the Middle East, hoping to create relationships in more markets and hence reduce their reliance on U.S. markets. At the moment, Eastern Canada represent between 30% and 40% of Canadian exports to the Middle East (Figure 2.5), with over 90% of these exports originating in Quebec.

Figure 2.5: Value of Canadian Lumber and Wood Panels Exports to the GCC, by province and parts of Canada, 2003-2012

All of Canada’s hardwood lumber products to the GCC originates in Eastern Canada. Yet, softwood lumber products still represent most of Eastern Canada’s exports to the GCC (Figure 2.6). Wood panels accounted for less than 5% of total export value from Eastern Canada to the GCC in 2012.
2.3 Market Share and Key Competitors

2.3.1 Coniferous (Softwood) Sawnwood

For coniferous sawnwood, Canada’s market share in 2010 was about 8% (Figure 2.7). Eastern Canada’s market share, however, was only 2% of the market. Key competitors were Romania, Sweden, Germany, Chile and Finland.

Sweden and Finland produce similar species, such as spruce, which is comparable to Canadian SPF, but their product is seen by traders and consumers as having a quality advantage over Canadian SPF, due to slight aesthetic differences and marketing efforts. This modest premium
can meaningfully affect profitability of Canadian wood, and reversing this effect would serve Canada well.

In general, the GCC construction market employs Canadian SPF in concrete forming and shuttering. In such applications, structural properties of lumber are not typically considered. This means that the advantageous structural properties of Canadian black spruce compares to Chilean Radiatta pine, for example, do not translate into higher prices.

Indeed, Chilean wood tends to grow faster, has a longer fibre and has lesser strength properties than Canadian wood. The fact that this is not generally understood by end-users in construction puts Canadian products at a disadvantage, and hence no market premium is paid at the moment. Marketing efforts to end users, rather than traders (who want to maximize volumes purchased and thus see little advantage in selling more durable products), are required.

2.3.2 Non-Coniferous (Softwood) Sawnwood

For non-coniferous sawnwood, Canada’s market share in 2010 was about 4% (Figure 2.8), all originating in Eastern Canada. The list of key competitors remains similar, with the addition of Malaysia and the United States. Malaysian hardwood, however, is quite different in aesthetic quality and application from Canadian species, and thus they are not interchangeable products. Also, logistics from the U.S. is very similar to that of Canada, and further analysis is thus of limited interest.

![Figure 2.8: Market Share of GCC Imports by Value for Non-Coniferous Sawnwood, 2010](image)

Source: FAOStat Forestry Database and Industry Canada Trade Data Online

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Please note that while FAOStat data indicated that Sweden and Finland were major importers of hardwood to the GCC, further verifications confirmed this is not the case. These countries’ market share were thus included in the ‘Others’ category.
2.3.3 Wood Panels

The market for wood panels is entirely different. Not only is Canada not a significant player (market share of 0.4% in 2010, with 0.34% for Eastern Canada), but the competitors are also of an entirely different nature. Indeed, the market is mainly served by low-cost manufacturers located in Asia. There may be space for high-quality products, but in terms of transportation cost Canada cannot hope to compete with suppliers such as India, Thailand or China for delivery to the GCC. Based on this, the transportation analysis focused on competitors for sawnwood, and largely ignored competition from Southeast Asian countries.

![Figure 2.9: Market Share of GCC Imports by Value for Wood Panels, 2010](source: FAOStat Forestry Database and Industry Canada Trade Data Online)

2.3.4 Key Conclusions

Based on this analysis, Figure 2.10 shows the list of countries that were identified as Canada’s key competitors and for whom transportation cost benchmarking will be undertaken. The list is very similar for softwood and hardwood, with the addition of Chile for softwood. Malaysia was not kept for hardwood since its products were deemed too different, and the U.S. was also not kept since its logistics are very similar to those of Eastern Canada.

![Figure 2.10: Countries to be Benchmarked Based on Market Share Analysis](source: CPCS analysis)

<table>
<thead>
<tr>
<th>Coniferous (Softwood) Sawnwood</th>
<th>Non-Coniferous (Hardwood) Sawnwood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Romania</td>
<td>Romania</td>
</tr>
<tr>
<td>Germany/Austria</td>
<td>Germany/Austria</td>
</tr>
<tr>
<td>Sweden/Finland</td>
<td></td>
</tr>
<tr>
<td>Chile</td>
<td></td>
</tr>
</tbody>
</table>

Source: CPCS analysis
2.4 Evaluating the Opportunity

The current limited market share of Eastern Canadian forest products in the GCC suggests growth potential. The market for sawnwood, however, remains comparatively small with total imports to the GCC in 2010 at USD1.2 billion. Indeed, if Canada had been able to capture the entire sawnwood market in the GCC in 2010, its total worldwide exports for these products would have been 19% higher than they were.

The opportunity is growing, however. Indeed, the GCC markets have grown in recent years, and all indications are that they will continue to grow in the future. For example, housing starts are expected to continue to rise in Saudi Arabia. In 2011, it was estimated that another 1.65 million houses would be needed by 2015. Housing construction and mortgage finance legislation will facilitate home ownership by a large proportion of the population under 25 there.\(^6\) The UAE construction industry is also growing rapidly, with annual growth between 2012 and 2016 expected to be nearly 10%.\(^7\)

It is, however, important to note that forces external to the GCC market are having a tremendous impact on Canada’s presence there. Indeed, the resurgence of the U.S. housing market is pushing up the price that can be fetched for lumber on the continent (Figure 2.11).

\(^7\) Gulfnews.com, “UAE construction industry rises to new heights”, http://gulfnews.com/business/construction/uae-construction-industry-rises-to-new-heights-1.1161652
The rise in Asian demand is now being coupled with the returning U.S. demand it once replaced, with some softwood prices up 60% over the 2011 low.\(^8\) As a result, even suppliers that maintain strong relationships in the Middle East are seeing their focus shift back to the U.S., though according to stakeholders consulted customers in the GCC have been willing to partially pay for some price escalations to date. Their willingness to absorb further increases, however, remains doubtful and the gap between North American and GCC prices is likely to widen.

In addition to rising prices in North America, European competitors are benefiting from a devalued currency. Indeed, the stagnation of Europe’s economy, and devaluation of the Euro, hampers Canada’s competitiveness versus Europeans competitors. Going forward, this disadvantage should continue to grow. Indeed, according to the latest Scotiabank foreign exchange outlook (April 2013), the Euro will continue to devalue compared to the Canadian dollar in 2013 and 2014.\(^9\) While the Euro stood at CAD 1.30 in March 2013, it is expected to decline to CAD 1.23 by the end of 2014.

Overall, there seems to be scope for Eastern Canada to grow both its softwood and hardwood exports to the GCC. Given the limited size of the opportunity (e.g. 600 million if 50% of the market was captured today), however, and the variety of competitors, the opportunity appears to be more one based on the need for trade diversification and risk management, rather than purely export growth.

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3

Supply Chain Review and Transportation Cost Competitiveness

Key Messages

The main destination ports of entry for Eastern Canadian wood products are Jebel Ali, UAE and Jeddah, Saudi Arabia.

Eastern Canadian suppliers of wood products overwhelmingly ship via Montreal with transhipment in Northern Europe, as no direct service is offered. Competitor nations use a variety of routes and transhipment options, with most favoured configurations involving transhipment.

Eastern Canada producers face much longer transit time than all other competitors, with the exception of Chile. Ocean rates are significantly higher than producers in Germany, Austria and Romania. Rates from Finland, Sweden and Chile were roughly competitive with those from Montreal. It is also worth mentioning that Chilean producers sometime use breakbulk shipping, which is much faster and can also be more economical, although this was not costed.

Finally, one should also note that Eastern Canada faces generally higher inland costs than its competitors.
This chapter provides an overview of the supply chain elements and export logistics for lumber imported to the GCC. It outlines the basic supply chain routing for Eastern Canada wood products and associated transit times and costs, followed by the same analysis for key competitors. It closes with an assessment of the overall competitiveness of Eastern Canadian wood products in GCC markets.

### 3.1 Overview of Key Cost Components

#### 3.1.1 Inland Costs

**Trucking:** Where the distance leads it to be economically feasible, lumber is shipped from the sawmill to either a warehouse at the port (for breakbulk vessels) or a container stuffing facility at or very near the port. When the distance is not prohibitive (less than 100 km approximately or slightly further along major highways) empty containers may be brought directly to the mill to be loaded, saving the cost of a reload centre (as mill labour is used to stuff the container). While trucking costs in competitor nations were outside of scope, domestically these costs are roughly $350 per container load at a distance of roughly 400 km.

**Rail:** Rail is more economical than truck shipping over long distances, with a rail car holding roughly three containers worth of lumber, depending on dimension. Of course, this requires that the mill be situated on a rail spur and it is subject to rail rates and schedules. Savings can be as much as 40% over the trucking alternative for long distances and very large loads. In general, the lack of flexibility and the need to ship smaller parcel lots to serve the limited GCC market mean that trucking is the preferred mode for inland transportation.

**Barge/shortsea:** Competitors with mills on tidewater, namely Sweden and Finland, are able to utilize barges and small vessels to consolidate shipments in ports of export. This provides great inland costs savings versus rail and especially truck, an option often not available to Eastern Canada’s producers which are not located on tidewater. This mode is also used heavily to source inputs (mainly logs).

**Stuffing/reload centres:** The producer or a third party may combine shipments from multiple mills at ports for loading into bulk vessels or into containers. There is modest cost for the container stuffing that mills like to avoid when the cost of bringing empty containers to their facility is more economical. Stakeholders noted that third-party container stuffing costs in the Montreal area were between $400 and $500 per container, including drayage costs between the port and the stuffing facility.
3.1.2 Vessel Costs

Container
For Canada and all competitors, ocean sailing makes up the majority share of transportation cost and transit time. Ocean container rates are all inclusive. They include fees such as: basic ocean freight, terminal handling charges at origin, terminal handling charges at destination, container cleaning fee, port security fees, emergency risk surcharge, fuel surcharge, and documentation fees at origin and destination.

Containerization of lumber typically utilizes 40-foot-high cube containers. While numbers will vary depending on moisture content and dimensioning, 40-50 m³ is a typical container load, depending on the moisture content of the wood, as it is weight and not volume that will restrict the load size. Because of the small quantities exported to the GCC, Eastern Canada’s lumber is containerized (exclusively). In some competing countries, stakeholders noted that a mix of bulk vessels and containerization is used by competitors.

Breakbulk
In the shipping world, wood, pulp and paper are generally classified as being part of the “neo-bulk” market, along with metal products, fruit and vegetables and other breakbulk products. Unlike other bulk products (e.g. coal, grain or wood chips), bulk shipping of wood, pulp and paper requires a particular type of ship, i.e. an open hatch bulk carrier (OHBC). The size of OHBCs varies from roughly 10,000 dwt to 53,000 dwt.

Some Western Canada producers use breakbulk to export wood products from B.C. to Asia. Asian markets, including lumber and logs, however, receive well over $2B in Canadian exports each year, and it still requires the cooperation of a coalition of major shippers to economically operate a regular OHBC charter. This shows that in order for breakbulk shipments to be economical, very large volumes are needed (or container rates must be particularly high, as they were in 2008).

3.1.3 Tariffs
The GCC is a free trade area. Hence, tariffs into the region are common to all member countries. At the moment, tariffs for most wood products, including sawnwood, stand at 5%.¹⁰ Many exporters, including stakeholders consulted, were unaware of these tariffs since they deliver to free trade zone. The tariff is thus paid by the customer when the product is shipped inland.

It can be noted that Canada’s major competitors do not have free trade agreements with the GCC, and thus face the same tariffs.

3.2 Approach and Sources

3.2.1 Sources
To examine the total transportation costs from Eastern Canadian ports and competing nations to the GCC, we sought transportation costs from local suppliers and international rates from freight forwarders in Europe. Container rates are all for 40-foot-high cubes, typical for lumber products. **All prices are in USD unless otherwise noted.**

It is important to note that the rates obtained represent the most competitive commercial rates for large shippers. They can be significantly lower than spot rates for single containers and from rates published by shipping lines. Indeed, competitive commercial rates include bulk discount and are based on prices for the most efficient transportation provider in the region. The latter is important since prices can vary significantly across shipping lines depending on the location of the hubs they used, especially for routings requiring transhipment.

The visibility of international supply chain costs and competitiveness is very low for domestic producers. As a result, while domestic data was obtained relatively easily, detailed commercial rates could not be determined for every international competitor. CPCs models, built on up-to-date cost indices and published rates, were used when local freight forwarder data were unavailable.

3.2.2 Key Markets and Ports of Destination
For destination ports, the ports of Jebel Ali in the UAE and Jeddah in Saudi Arabia are used. These are the two main GCC ports handling containerized lumber imports. Jebel Ali handles about 13 million twenty-foot-equivalents (TEU) per year,\(^1\) making it the biggest port in the Middle East. By comparison, Jeddah handles a bit less than 6 million TEU per year\(^2\) (which is still more than double the number of TEUs handled by Canada’s largest port, Port Metro Vancouver). Planned investment will push Jebel Ali’s capacity to 19 million TEU by 2014, with dredging allowing it to receive the largest current (14,000 TEU) and upcoming (18,000 TEU) container vessels. Jebel Ali is the larger port with more frequent service, larger vessels and thus more competitive rates.

3.3 Eastern Canada Exporters

3.3.1 Overview of Key Supply Chain Infrastructure and Available Services
The supply chain of Eastern Canada’s lumber to the Middle East is relatively straightforward. Raw logs are trucked to sawmills where they are sawn and usually treated or dried. Prepared

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\(^1\) http://www.dpworld.ae/en/home.aspx
\(^2\) http://www.ports.gov.sa/English/SAPorts/Jeddah/Pages/CargoStatistics.aspx
lumber will either be trucked or railed to the nearest port to be loaded into containers. If the sawmill is near enough to the port, empty containers may be brought directly to the mill to be stuffed.

As over 90% of Eastern Canada’s lumber is sourced from Quebec, the Port of Montreal is the principal port of export, with Halifax a very far second. In some cases, we could also expect some lumber exports to be railed to the port of New York/New Jersey as direct service to the GCC is offered from that port. Costs, however, are generally significantly higher.

The Port of Montreal handled 1.8 million tons of containerized forest products in 2012. Wood serves as a backhaul opportunity for the significant amount of containerized goods arriving via Montreal, which has contributed to the exclusive containerization of wood versus bulk shipping. The principal lines offering Middle East Service from Montreal are:

- OOCL
- Safmarine (owned by Maersk Line)
- Mediterranean Shipping Company (MSC)
- Hapag Lloyd
- CMA CGM

It is worth noting that none of these liner services offer direct shipping to GCC countries from the Port of Montreal. Indeed, they nearly all rely on transhipment operations located in Northern Europe. The service to Europe from each line is quite frequent (at least weekly), but total transit times to the GCC can be slow due to the need for transhipment.

In addition to these services, it should be noted that Safmarine also offers a service from Montreal to the GCC via the port of New York/New Jersey. Indeed, in this case containers are railed from CSX’s container yard on Montreal’s south shore to Newark. Containers are then shipped directly to the Middle East from that port. The service is significantly faster, but the additional cost of the rail transhipment is significant.

There are a number of major third party warehousing and logistics providers near the port of Montreal providing stuffing and logistic services (drayage, booking ocean freight, documentation). They are generally seen as competitive and reliable. These include Trac-World Freight Services, GT Group and CN to name a few.

Finally, numerous local trucking lines serve the region. CN, with an extensive network across Quebec and Ontario, directly serves the port. CP also serves the port, but its network in Quebec is limited to the Montreal area-westward. It extends its reach significantly through arrangements with its shortline partner, namely Chemins de Fer Quebec-Gatineau (CFQG).
Though less involved in the lumber trade, Halifax provides service to the Middle East via a number of services:

- Bahri North America (monthly)
- NYK Line (weekly)
- Hapag Lloyd (weekly)
- OOCL (weekly)

Unlike liner services from the Port of Montreal, most of the services out of Halifax have a direct port call in Jeddah, and one (Bahri) also calls at Jebel Ali and Damman. These vessels make multiple stops along the U.S. East Coast, stopping last in Halifax, and proceeding across the Atlantic.

Unsurprisingly given the provincial breakdown of exports to the GCC, all producers consulted were using the Port of Montreal to serve GCC markets at present.

### 3.3.2 Supply Chain Mapping

The main ports of call served by the container lines are Jebel Ali in the UAE and Jeddah in Saudi Arabia. Fairly efficient trucking options exist to other GCC states from these ports of entry, particularly Jebel Ali. Bahrain, Qatar and Oman are all adjacent or within a few hundred kilometres of the UAE; Riyadh is in fact closer by truck to Jebel Ali than Jeddah. Figure 3-1 below depicts a typical routing from Montreal.

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One can note that there is a reverse leg of travel between Jebel Ali and Jeddah. While direct service is also available to Jeddah, rates obtained through this routing were lower than those for direct service to Jeddah.\(^{14}\) Of course, transit times were longer for that option.

Shipping to Jebel Ali via Montreal involves stopovers at a major European port such as Hamburg, Bremmerhaven, Antwerp, Rotterdam or Le Havre for transhipment into Suez-transiting vessels serving Middle East North Africa (MENA) routes. Halifax services are based on multiple stops along the East Coast and multiple stops in the Middle East, which means

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\(^{14}\) Some shipping lines can likely offer more competitive direct service to Jeddah from European transhipment ports than what was obtained. It largely depends on which port a shipping line decides to focus its hub activity. In general, Jebel Ali is the container hub in the Middle East, and as a result rates to that port are lower.
that containers can generally reach the MENA region without transhipments (but not necessarily cheaper\(^{15}\)). A simplified routing is depicted in Figure 3-2 below.

3.3.3 Cost and Transit Time Analysis

Detailed cost and transit times are for marine portion of transportation only (port to port).

**From Montreal to UAE**

Cost: $1,880 all-in  
Time: 33-37 days  
This was the most competitive rate, though other services range from $2,100 to $2,700. By comparison, the Safmarine route offered via rail to New Jersey was $2,400, but only 27 days in

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\(^{15}\) As is the case for air travel, direct services compete with hub-based services. While direct services are faster, they generally use smaller ships and/or must make a number of stops to generate enough traffic (scale) to justify a larger ship. Hence, direct services are not necessarily cheaper than hub-based services with transhipment.
travel time. Shippers of forest products tend to be more price than time sensitive, so this option would generally prove cost prohibitive.

From Montreal to Saudi Arabia
Cost: $1,900 all-in
Time: 31-57 days
The rate obtained was based on the shipper’s willingness to allow a circuitous route to a port that is geographically closer than Jebel Ali, hence the transit time of 57 days. Shippers generally prefer lower prices at the expense of time for low value to weight products such as softwood. Faster services to Jeddah are common (31 days), but in some cases they are slightly more expensive ($2,000 to $2,200 based on quotes received). Of course, these prices depend on the freight forwarder and the shipping line used.

Halifax to Jeddah
Cost: $2,100 all-in
Time: 20-22 days
Currently, Halifax sees little activity. A rate from late 2012 to Jebel Ali for forest products from Halifax was $2,100. It could be noted that the route from Montreal offered by way of rail to New Jersey ($2,400) utilizes a vessel that likely stops in Halifax, so this price seems reasonable given the cost of rail transportation between Montreal and New Jersey. Transit time is very short, estimated at 20-22 days since there is no rail movement and the ocean leg between New Jersey and Halifax is eliminated.

It is important to note that the Halifax routing makes sense only for shippers from Atlantic provinces. Indeed, the costs of rail transportation to Halifax are generally very high, making any export from Quebec or Ontario via Halifax uncompetitive.

Mill to Destination Port Logistic Cost
Figure 3.3 provides illustrative examples of logistics costs based on estimates obtained through consultations.

<table>
<thead>
<tr>
<th>Element</th>
<th>Near Port (&lt;100km)</th>
<th>Inland (est. 400km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trucking near Port of Montreal</td>
<td>N/A</td>
<td>350</td>
</tr>
<tr>
<td>Stuffing/positioning at Port</td>
<td>N/A</td>
<td>450</td>
</tr>
<tr>
<td>Container trucking to/from mill for stuffing, positioned at port</td>
<td>500</td>
<td>N/A</td>
</tr>
<tr>
<td>Ocean freight (all-in)</td>
<td>$1,900</td>
<td>$1,900</td>
</tr>
<tr>
<td>total</td>
<td>$2,400</td>
<td>$2,700</td>
</tr>
</tbody>
</table>

Source: CPCS based on consultations.

For mills located within a close range of the port, the cost of container drayage between the mill and the port remains reasonable, so stuffing at the mill is economical. For mills located
Further away, products are trucked to a stuffing facility near the port, where it is stuffed. Containers must still be drayed to the stuffing facility and back to the port. Based on consultations, preferences about the location of container stuffing (mill or stuffing facility) vary by organization, mill location and distance and container availability.

3.4 Competing Countries

As mentioned in the previous chapter, the key competitors in the GCC lumber market are Romania, Germany, Austria, Sweden, Finland and Chile. The following sections examine these competitors insofar as data were available. The benchmark ports used represent major regional hubs for container shipping.

3.4.1 Romania

Overview of Key Supply Chain Infrastructure

Romania’s position on the Black Sea makes it the closest to market of the competitors identified, and container rates reflect this. The port of Constanta loaded 928,000 tons of wood and cork in 2012.\(^\text{16}\)

Inland costs are also advantageous compared to most Canadian producers. Forested areas are on the order of 100-200 km inland, half the typical distance for Quebec’s producers to the Port of Montreal. Local labour and handling are also cheaper, minimizing container stuffing costs.

Supply Chain Mapping

Romania enjoys a very short route to market via the Black Sea, via Constanta. However, as container economics and network are built on a hub-and-spokes model, no cheap direct route exists between Romania and the GCC. In researching rates for this study, a route with transhipment in Port Klang, Malaysia, was found, though similar detours to other, nearer transhipment are also likely. For example, Maersk’s proposed service is routed via Kumport in Turkey, but prices are slightly higher.

\(^\text{16}\) Port Constantza – Overview/ Port Statistics /Traffic by commodities; http://www.portofconstantza.com
Cost and Transit Time Analysis

Cost to Jebel Ali: USD $1,240
Transit Time: 35-37 days
Rates to Jeddah were not available. It is unclear if a service to Jeddah is available directly, but transhipment via Jebel Ali appears more likely.

3.4.2 Western Europe

Overview of Key Supply Chain Infrastructure

Sweden and Finland

Located on the Swedish West Coast, Varberg is Sweden’s largest timber port, a position it has held for many years. In 2010 it exported 700,000 m³, down from previous highs of 900,000, but this represents only 6% of the 12 million m³ of softwood exported by Sweden. The port is
also looking to grow its share of Swedish exports.\textsuperscript{17} This port, however, is a breakbulk port. For exports to the GCC, the port most likely to be used is Gothenburg, which handled 900,000 TEU in 2012.\textsuperscript{18}

Finland is Europe's most heavily forested country. Forests as defined by the FAO cover 23 million hectares or 74.2\% of the land area.\textsuperscript{19} The country has extensive coastline and a deep inland port network, therefore distance to tidewater is vastly shorter on average than in Canada. Nearly all of the forest resources are within a few hundred km of ports. Containerized exports from Finland could be shipped through Helsinki or Kotka, among others.

Without being able to delineate specific costs, both Sweden and Finland are seen to have a strong competitive advantage in inland freight logistics. Many mills dot the coastlines, providing huge transhipment options by water, instead of road or rail via the Gulf of Bothnia and the Baltic Sea. The distances inland to tidewater are significantly shorter than the Canadian average.

\textbf{Austria and Germany}

While Austria is landlocked, it is within 100 km of major Adriatic ports such as Trieste, Italy, and Koper, Slovenia. The Port of Koper’s Timber Terminal handles mainly sawnwood and semi-finished wood products. With capacity for one million cubic metres per year, it has 60,500 square metres of covered storage and 58,500 square metres of open storage for timber. Trieste in the northeast is a major Italian port. Its Industrial Port handled 682.6 million tons. By far the largest share of that cargo (35.1 million tons) was handled through the Timber Terminal in 2008.\textsuperscript{20}

Germany is also well known for its major ports in the north, Hamburg being the largest. This port, and competing ports such as Bremerhaven, Rotterdam, Antwerp and Le Havre are used in transhipment from Montreal. Being further west of these major ports, Hamburg is also well suited for feeder service from Finland and Sweden.

\textbf{Supply Chain Mapping}

For simplicity, the circuit of European ports are all mapped in Figure 3.5, though note that the entire route is not representative of a single container line service.

\textsuperscript{17}http://www.risiinfo.com/techchannels/transportation/Expanding-timber-exports-at-Swedens-Port-of-Varberg.html
\textsuperscript{18} It is also possible that some lumber is shipped breakbulk to Northern Europe, and then stuffed into containers for exports to the GCC through German container hubs.
\textsuperscript{20}http://www.borealforest.org/world/world_finland.htm
\textsuperscript{20} World Port Source
Sweden and Finland ports do not have direct service to the GCC. Instead, they use a number of feeder services, which are operated by small lines relying on very small TEU vessels (e.g. 450 TEU), to consolidate shipments in major nearby ports on the North Sea, typically Hamburg and Bremerhaven.

Germany is geographically well suited to use either northern or southern ports depending on where the lumber is produced. Direct service between these ports and Jebel Ali and Jeddah are available from a number of different lines.

For Austrian exports, direct services between Trieste and Jeddah (with multiple stops) are offered by both CMA-CGM and Maersk.

**Cost and Transit Time Analysis**

*Germany*

Cost to Jebel Ali: USD1,400  
Transit Time: 24 days
Figure 3.6 shows ocean rates from some North Sea ports to selected Middle Eastern ports. It should be noted that these rates are based on quotes received assuming large shipments\(^{21}\) of 40-foot-high cube containers, reflective of rates that a steady forest product producer would receive. These rates can reflect discounts of 40% to 80% from the highest individual container spot rates.

<table>
<thead>
<tr>
<th></th>
<th>Le Havre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jebel Ali, UAE</td>
<td>$1,385</td>
</tr>
<tr>
<td>Doha, Qatar</td>
<td>$1,760</td>
</tr>
<tr>
<td>Jeddah, Saudi Arabia</td>
<td>$1,850</td>
</tr>
<tr>
<td>Qasim, Pakistan</td>
<td>$2,455</td>
</tr>
</tbody>
</table>

Prices all-in, collection Le Havre to arrival ports; all prices USD. Highlighted prices are those used in the analysis. Prices are indicative for shipments out of other nearby ports such as Hamburg, Antwerp, Bremerhaven and Rotterdam. Source: European freight forwarders.

Prices are illustrative of the freight rates from Northern Europe to the GCC. Major ports of Le Havre, Rotterdam, Bremerhaven and Antwerp compete for traffic share and the front-leg routes of the Montreal pass through these cities. This allows us to compare the final all-in price from Montreal to those of Northern European shipments, or to combine these prices with those of feeder services from Sweden and Finland to obtain comparative rates.

The Hamburg rates would be on par, if not less, than the rates from Le Havre. Doha and Qasim are included to illustrate Jebel Ali’s affordability versus neighbouring ports.

**Sweden and Finland**

Cost from Sweden to Jebel Ali: USD $1,700-$1,850  
Transit Time: 27 days  
Cost from Finland to Jebel Ali: USD $1,750-$1,900  
Transit Time: 28 days

Feeder routes from Sweden and Finland were estimated at $450 and $500 per container respectively.\(^{22}\) Combined rates (feeder plus main leg) could be slightly lower, especially if containers are fed through Hamburg, which generally displays slightly lower rates than Le Havre. By the rates in Figure 3.6 from Le Havre, a $400 premium to Jeddah would not be unreasonable.

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\(^{21}\) Large shipments reflect exports of about 50,000 cubic metres per year, or about 1,500 containers. Similarly, stakeholders in Eastern Canada mentioned that any parcel of less than 10 containers was uneconomical. Obviously, that emphasizes the fact that scale matters when it comes to transportation over long distances.  
\(^{22}\) CPCS analysis for 500-TEU feeder vessel based on various inputs, fuel and charter rate indices.
Transit times are based on posted schedules and should be quite accurate. For a direct route, Jeddah would be two days faster, but in all likelihood a transhipment in Jebel Ali would be most cost competitive, as was the case for Montreal.

**Trieste**

Cost to Jeddah: USD $1,050 to $1,150  
Transit Time: 8 days  
Cost to Jebel Ali: USD $1,250 to $1,350  
Transit Time: 21 days

While Trieste does not offer direct service to Jebel Ali, it has rotations (Maersk, CMA-CGM) servicing Jeddah. No commercial rates were available, but Maersk published rates provide a good indication. For example, the service between Trieste and Jeddah (direct) was priced at 85% of the service between Constanta and Jeddah. The price to Jebel Ali, however, was much higher given that transhipment via Port Said is necessary. In this case, the price was nearly 10% higher than the quoted price from Constanta. These ratios were used to derive estimates of commercial rates out of Trieste.

### 3.4.3 Chile

**Overview of Key Supply Chain Infrastructure**

Chile possesses a number of logistical advantages. Its production is always close to tidewater, facilitating the movement of both inputs and outputs. It also benefits from relatively cheap port labour. On the other hand, among the competitors identified, it is the one furthest away from GCC markets. Moreover, as a small country, it does not have a great variety and frequency of container services and must rely heavily on transhipments.

At least one major supplier, Arauco, is known to have recently used a regular breakbulk service direct to Fujairah, Oman. With sufficient volumes, the logistics of breakbulk can lead to cost advantages since using a direct route can save at least 30% in distance travelled, and there are no fees associated with the Panama and Suez Canal. There are also no associated container stuffing/destuffing costs, although these savings can be somewhat offset by higher breakbulk handling costs.

**Supply Chain Mapping**

Chile’s ports to the south of Santiago are the major exporters of wood and paper products. The port of San Antonio is accessible by major shipping lines, namely Maersk and Hamberg Sud. The Maersk service is routed via the Panama Canal, with transhipment in Panama and in Algeciras. The Hamburg Sud service also has two transhipments (Itapoà and Tangiers), but it circumvents the Panama Canal.

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23 As a reference point, note that Trieste is 15% further than Constanta (2,000 vs. 1,700 nautical miles) from GCC destinations.
In addition to containerized product, CPCS learned in consultations that at least one shipper operates a bulk vessel utilizing a southern route, including direct service to Fujairah, Oman. Both are included in Figure 3.7, below. These bulk shipments likely originate from major bulk forestry ports such as Lirquen and the nearby San Vincente\textsuperscript{24,25} in the Bio Bio region of Chile, though CPCS was unable to confirm this information.

Figure 3.7: Map of Shipping Routes from Chile to Saudi Arabia, the UAE and Oman

Cost and Transit Time
Cost to Jeddah: USD $1,800 to $2,000
Transit Time to Jeddah: 26 days or 47 days, depending on service
Cost to Jebel Ali: USD $1,900 to $2,100
Transit Time to Jebel Ali: 30 days or 50 days, depending on service.
It is known that inland costs are very competitive because Chile is geographically narrow and has tidewater options for consolidation. Port labour costs are lower as well.

\textsuperscript{24} http://www.worldportsource.com/ports/maps/CHL_Port_of_San_Vicente_1742.php
\textsuperscript{25} http://www.amchamchile.cl/sites/default/files/maritime_ports_io.pdf
The use of a breakbulk ship by some Chilean producers suggests that container rates are fairly high. This is not surprising since all routes identified to Jeddah and Jebel Ali involved two transhipments and at least one Canal fee. The distance is also longer than for any other competitors, and the ships used for the transatlantic legs are generally smaller than those from Montreal or Halifax (less economies of scale, limited backhaul).

While commercial container costs were unfortunately not available, published rates by Maersk provide a good indication. Chilean rates were between 40% and 50% higher than rates from Northern Europe ports. Costs were derived from these estimates.

In terms of transit time, the longest route is Maersk through the Panama Canal. This route has two transhipments, one in Panama and one in Algeciras. The estimated transit time is 47 days to Jeddah and 50 days to Jebel Ali. The route offered by Hamburg Sud transits in Itapoa, Brazil, and Tangiers, Morocco. The estimated transit time is 26 days to Jeddah and 30 days to Jebel Ali. Finally, the estimated transit time for the breakbulk service, based on distance and estimated speed, is 16 to 20 days.

3.5 Conclusion of Supply Chain Benchmarking

The main destination ports of entry for Eastern Canadian wood product exports are Jebel Ali, UAE, and Jeddah, Saudi Arabia. Eastern Canadian suppliers of wood products overwhelmingly ship via Montreal with transhipment in Northern Europe, as no direct service is offered. Competitor nations use a variety of routes and transhipment options, with most favoured configurations involving transhipment.

Figure 3.8 summarizes key findings. Eastern Canada producers face much longer transit time than all other competitors, with the exception of Chile. Ocean rates are significantly higher than producers in Germany, Austria and Romania. Rates from Finland, Sweden and Chile were roughly competitive with those from Montreal. It is also worth mentioning that Chilean producers sometime use breakbulk shipping, which is much faster and can also be more economical, although this was not costed.

Finally, Eastern Canada also faces generally higher inland costs than its competitors. Hence, the analysis points to a transportation cost disadvantage for Eastern Canada producers compared to all competitors, with the degree varying depending on producer location relative to port of export. Of course, this analysis does not take into account quality differences, nor does it account for production costs differences.
Figure 3.8: Comparative Transportation Costs and Transit Time

<table>
<thead>
<tr>
<th></th>
<th>Jebel Ali, UAE</th>
<th>Jeddah, Saudi Arabia</th>
<th>Inland Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ocean Rate</td>
<td>Transit Time (days)</td>
<td>Ocean Rate</td>
</tr>
<tr>
<td>Eastern Canada</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>via Montreal</td>
<td>$1,880</td>
<td>33-37</td>
<td>$1,900</td>
</tr>
<tr>
<td>via Halifax</td>
<td>$2,200</td>
<td>22</td>
<td>$2,200-$2,400 (est.)</td>
</tr>
<tr>
<td>Key Competitors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Romania</td>
<td>$1,240</td>
<td>35-37</td>
<td>N/A</td>
</tr>
<tr>
<td>Austria/ Germany (South)</td>
<td>$1,250 to $1,350 (est.)</td>
<td>21</td>
<td>$1,050 to $1,150 (est.)</td>
</tr>
<tr>
<td>Germany (North)</td>
<td>$1,300-$1,400</td>
<td>20</td>
<td>$1,800 (est.)</td>
</tr>
<tr>
<td>Sweden</td>
<td>$1,700-$1,850</td>
<td>27</td>
<td>N/A</td>
</tr>
<tr>
<td>Finland</td>
<td>$1,750-$1,900</td>
<td>28</td>
<td>N/A</td>
</tr>
<tr>
<td>Chile (Panama/East Coast Route)</td>
<td>$1,800-$2,000 (est.)</td>
<td>50/30</td>
<td>$1,900 to $2,100 (est.)</td>
</tr>
<tr>
<td>Chile (Breakbulk)</td>
<td>16-20 days to Fujairah, Oman</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: CPCS analysis of a variety of sources

3.6 Other Limiting Factors

3.6.1 Supply Chains Limitations

A number of supply chains limitations emerged during the study. The first one is the unavailability of (economical) empty containers further inland, beyond a 50 to 100 km range of Montreal (longer along the St. Lawrence). This limits potential savings by producers that would prefer to use cheaper mill labour to stuff containers. In view of the operational preferences of international shipping lines to keep their containers on ships rather than inland, this dynamic is here to stay.

Another limitation is the lack of direct liner services between the Port of Montreal and GCC ports. Indeed, shipping to the GCC via Montreal requires transhipment in Northern Europe. While prices remain competitive, this increases transit times, and also increases supply chain risks since more stakeholders are involved. Higher transit times mean higher inventory costs.

 Longer transit times also have a direct impact on the level of responsiveness producers can offer their clients. Given the limited volume to the GCC, producers are not in a position to maintain large inventories in the GCC. This, coupled with long transit times, means that new
orders can face significant lead times. Other competitors such as Chile not only have more volumes (arguably facilitating responsiveness), but their transit time is also much shorter (16 to 20 days for breakbulk). Austrian producers and southern Germany producers also face very short transit time of less than 10 days. While Eastern Canada producers can lower the transit time by using Maersk service out of the port of New York/New Jersey, the cost premium is high and the transit time gained is limited.

### 3.6.2 Fragmented Market

Despite the relatively small volumes shipped by Eastern Canada, the supplier and end-user markets remain fragmented. A handful of known exporters each ship small volumes directly or via trading houses in Canada to disparate buyers in the GCC.

Major Swedish and Finnish players have consolidated their efforts by creating jointly owned sales companies. They are controlled by major producers such as Swedish companies SCA, Martinson Sag AB and Sodra Timber AD, and Finnish companies UPM and Metsallitto. These sales companies are staffed with local ethnic Arabs, but their controlling interests are Scandinavian and serve to consolidate products under a single window. Romania follows a similar example. This allows for coalition efforts in not only sales, but also awareness and marketing.

This type of approach is not currently used by Eastern Canadian producers, putting them at a relative disadvantage.

### 3.6.3 Perception of Quality

As mentioned previously, Swedish and Finnish products have an aesthetic advantage, which translates into a price advantage (as much as $10-$15 per m³). Canadian products, despite possessing a strength advantage over Chilean pine, appear unable to effectively translate this advantage into a price premium.

### 3.6.4 Profitability of Alternate Markets

The steady increase in the price of wood and U.S. demand has left Canadian producers returning their focus to this traditional market. Producers indicated that while they still maintain their relationships with suppliers in the Middle East, volumes in 2012-2013 have decreased substantially from what was at times half of their market to a trickle today, with nearly 90% heading to the U.S.

This story was common to all those consulted, and will prove a major hurdle if current trends continue. Profitability has been strained, and these Mideast markets are returning meagre or no profit margins. The main reason for the continued presence of Canadian players is the willingness to “keep a foot in the door”.
Nonetheless, many export markets (including the GCC) are willing to pay extra as prices have steadily increased week over week for the past six months. If price trends continue, however, the willingness of the GCC to continue accepting higher prices will be severely tested.

Finally, if the Euro regained strength, the profitability of the main competitors in Europe would be squeezed, which would likely allow Canadian producers to fetch a higher price.
Conclusions and Recommendations

Key Messages

A general cost disadvantage to competitor markets was discovered, and inland costs in Canada are the highest. Transportation makes up a very large portion relative to total landed cost of product – between 25% and 30% of product value.

With the resurgence in the U.S. market most Eastern Canadian wood producers prefer to focus south of the border as this market is more profitable relative to many overseas markets, including in the GCC. Nevertheless, the GCC market does represent growth potential, which could help diversity Eastern Canadian wood product export markets.

Following our competitors’ example, Canada could use a single window to consolidate Eastern and Western Canadian products, hard and softwood and all dimensions. This would yield economies of scale in logistics, marketing and information management. Minimum volume commitments from producers could create the gravity needed to coalesce this type of cooperative arrangement. Relationship building is also needed to better promote the quality of Canadian products.

Jebel Ali is where transportation happens in the region. Saudi Arabia is, however, a larger market. More information is needed to identify the best base for operations in the region.
4.1 Conclusions

Clearly, Canada faces a transportation disadvantage relative to competitor nations, though the situation may not be as negative as one might assume. As of late, non-transportation factors play a larger role in Canada's involvement in the otherwise growing market.

Canada faces a cost disadvantage relative to competing nations located closer to GCC markets. Notwithstanding the levels of quality, dressing and dimensions of SPF lumber, the disadvantage is meaningful over a typical range of prices, e.g. $200-$300 per m$^3$.

Transportation (excluding input transportation) in general makes up a very large component relative to total landed cost of product, with logistics costs comprising 25-30% of product value for Eastern Canada's lumber. This share is generally slightly lower for competitors, and can be roughly estimated as low as 15%-17% for Romania (or an advantage of about $20 to $35 per m$^3$). Other competitors are generally more in the 20% to 30% range, with Canada's cost disadvantage in a much more narrow range ($0 to $20).

By our estimates, Sweden and Finland enjoy similar ocean rates and in many cases an inland cost advantage (or in this case, barge vessel), and a perceived quality advantage by GCC customers. Germany and Austria are producing similar products to Canada, face similar inland transportation hurdles, but have a small ocean transportation advantage since no transhipment is required. Indeed, shipping via the northern route is closer than Montreal.

Some international competitors, in addition to slightly lower transportation costs, generally enjoy economies of scale in the marketing and distribution of the product by consolidated local efforts. Other nations simply have better operations on the ground and stronger relationships.

Chile is the only competitor at a transit time and distance disadvantage, though port labour and narrow inland distances will buoy its competitiveness. Moreover, it has been able to arrange economic breakbulk service, which has associated cost advantages. It was also uncovered that Chile's faster growing, less sturdy product could be enjoying substitutability with Canadian wood that more aggressive marketing by Eastern Canadian producers could allay.

Where Canada can competitively land product, the issue of profitability in light of the U.S. recovery arises. Indeed, the resurgence of the U.S. market may be the most telling story. Market data suggests Canada is slowing its exports to the GCC while softwood and hardwood consumption are steadily growing. Canada needs a strategic mindset that sees diversification as an asset for which it is worth sacrificing margin. It must be kept in mind that improvements in the Euro or the plateau or decrease of U.S. demand could reverse these trends, and that the markets in the GCC continue to grow their own demand.
4.2 Recommendations

While GCC markets for lumber are growing, Canada’s exports to this market are falling, suggesting an opportunity to renew business development efforts in that market.

In terms of transportation, there are very limited actions that can be undertaken to lower shipping costs. The option of consolidating volumes and chartering a breakbulk vessel could be investigated, but given the volumes and level of commitments observed, it is unlikely to materialize as a viable option. Most other actions relate to merchandising and marketing, rather than to transportation.

Indeed, Canada needs to establish a presence on the ground. Canada’s role is to offer not just one mill’s products, but to be able to fulfill any need, with one-window shopping for buyers. This could involve softwood and hardwood, but also eastern and western suppliers. Recall that B.C. exports the greatest share of wood products to the GCC. This window could also serve as a one-stop repository of information for producers, to keep them abreast of changing demand patterns and ensure they have products meeting specifications for GCC users.

Following our competitors’ example, Canada needs a single window to consolidate Eastern and Western Canadian products, hard and softwood and all dimensions. This has the potential to generate economies of scale and focus on our transportation, marketing and information management efforts in the region. Leaders in industry could pool resources to establish a cooperative sales company. This would allow for augmented and concentrated marketing efforts, and would create gravity to draw producers together. Contribution from government to support this effort could aid its effectiveness, insofar as it is seen in national best interest to deepen trade ties here, similar to the inroads made in Asia in recent years.

Also, to solidify the commitment and create the appearance of reliability, participating members in a cooperative window could need to adhere to minimum volume commitments for the market, to backstop against the increasing shift to the U.S., and convince buyers that long-term relationships are viable. This could prime the pump for stronger Canadian ties in the GCC.

The findings of this study indicate that Jebel Ali is clearly the wood product import gateway for the GCC; with major ties to shipping lines and, for the most part, priority transit over Jeddah (especially from Montreal). To the extent that Canada’s trade-facilitating cooperative would be involved in the transportation aspect, having ties to Jebel Ali makes sense. It is within proximity to all markets, including Riyadh (closer than Jeddah), and there is huge investment still planned for the port proper and Jebel Ali’s Freezone.

On the other hand, Saudi Arabia represents by far the largest market for lumber in the area, and imports to that country generally change hands in Jeddah. To the extent that importers prefer to deal with representatives located in their country, this would favour Saudi Arabia as
a location to base operations. Of course, a number of other factors, such as the capacity to identify, attract, and retain strong resources, should also be considered.

In any case, it seems clear that more information is needed to make an informed choice about the optimal location to base commercial representation in the region.