

## Economic insights

Infrastructure projects are now facing schedule delays and cost escalations due to supply chain disruptions and a tight labour market. While global supply chains fared surprisingly well through the early stages of the COVID-19 pandemic, disruptions to delivery are now likely to be a medium-term problem that will take time to work through the system.

The infrastructure sector needs to prepare for ongoing supply chain and labour market issues, including factoring expected cost pressures into project and programme budgets. In the longer term, COVID-19 disruptions highlight the need to build resilience and redundancy into our infrastructure delivery system.

### The impact of COVID-19 on international supply chains

Global supply chains are more interdependent than ever. Raw materials and components may be shipped between countries multiple times to produce finished goods, meaning that bottlenecks in one place can cause further delays elsewhere.

COVID-19 has disrupted factory and port operation in Asian manufacturing centres, delaying shipments of goods and causing a fivefold increase in container freight costs (Figure 1).<sup>1</sup> This is a significant challenge for New Zealand's construction sector, which relies upon imported machinery and materials.<sup>2</sup> 69% of Auckland homebuilders and 59% of non-Auckland home-builders report problems with material and equipment availability.<sup>3</sup>

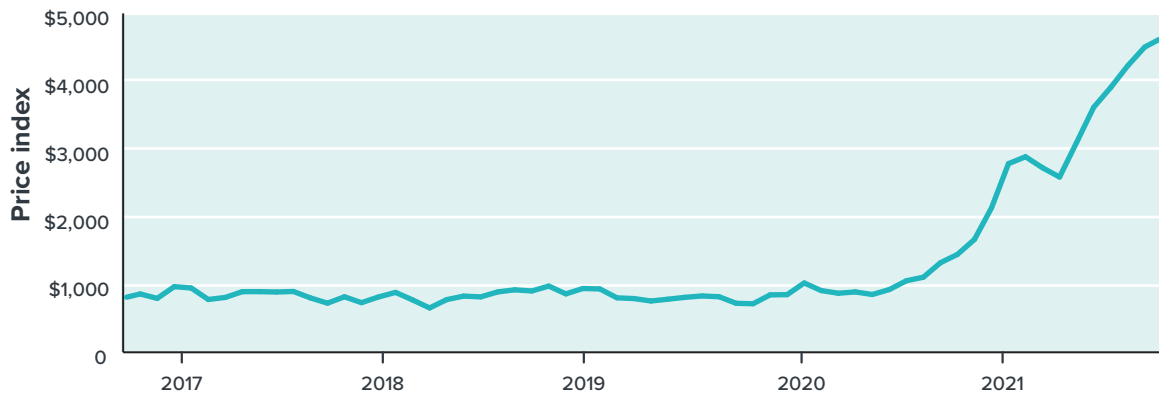
1. <https://en.macromicro.me/charts/947/commodity-ccfi-scfi>

2. <https://www.mfat.govt.nz/assets/Trade-General/Trade-stats-and-economic-research/STORM-Analysis-Unclassified-Version.pdf>  
<http://www.buildmagazine.org.nz/index.php/articles/show/in-short-supply-2>

3. <https://www.stats.govt.nz/news/impacts-of-COVID-19-on-new-home-building-projects>

**Figure 1: Container freight costs have escalated at an unprecedented rate<sup>4</sup>**

Shanghai Containerised Freight Index



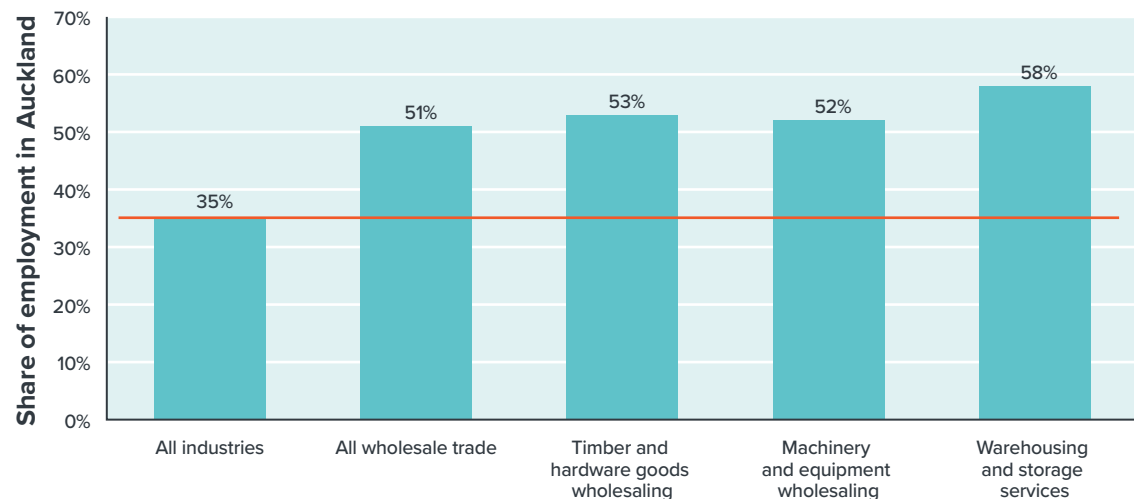
Source: Drewry

The impact of supply chain delays are visible in many areas. For instance, a global shortage of semiconductors is forcing car makers and construction equipment manufacturers to cut back production.<sup>5</sup> Locally, we have recently seen shortages of structural timber coupled with a backlog of export logs at ports, driven by a combination of surging demand and shipping capacity constraints.<sup>6</sup>

### Locking down the local supply chain

The impacts of the COVID-19 pandemic have been most acute in Auckland. Auckland lockdowns have a cascading effect on the nation’s construction sector due to Auckland’s role as a manufacturing and logistics centre. Most of the country’s wholesale trade and warehousing capacity is located in Auckland (Figure 2). Construction has been able to resume more rapidly in other parts of the country because lockdowns have been shorter, but difficulties shipping building materials out of Auckland have nonetheless caused delays.

**Figure 2: Critical elements of the supply chain are concentrated in Auckland**



Source: Statistics New Zealand Business Demography statistics, 2020<sup>7</sup>

### Labour has never been harder to find

Current supply chain issues are exacerbated by increasing difficulties in finding labour. The share of construction firms reporting labour shortages is now at its highest ever level (Figure 3). Labour shortages are expected to persist in the medium term, as BCITO projections suggest New Zealand will have a shortfall of approximately 118,500 construction workers in 2024.<sup>8</sup>

4. <https://www.economist.com/finance-and-economics/a-perfect-storm-for-container-shipping/21804500>

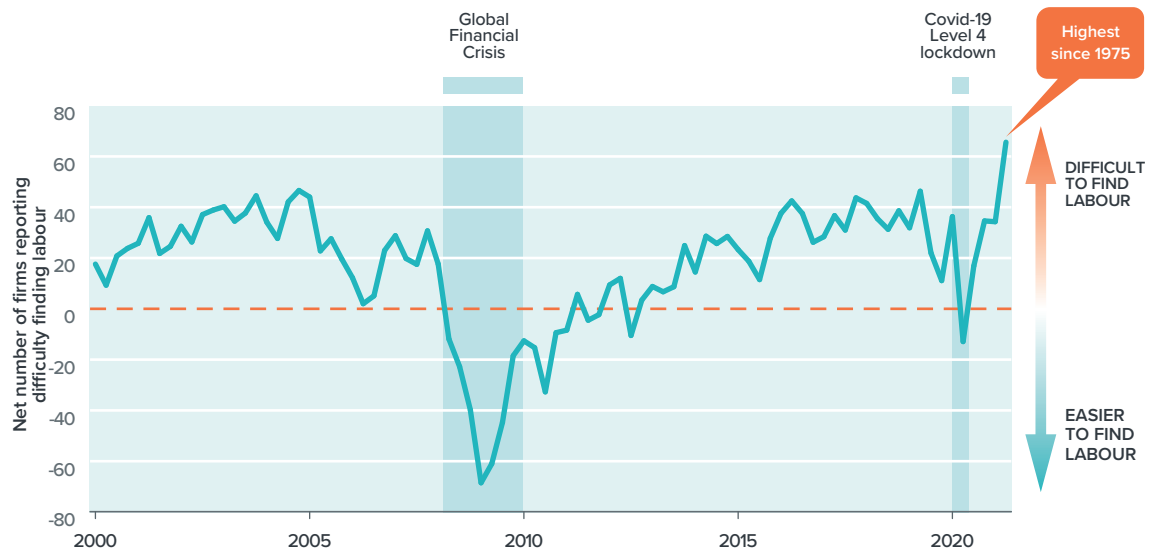
5. <https://www.dbusiness.com/daily-news/the-semiconductor-shortage-implications-for-the-global-economy/>  
<https://www.equipmenttradar.com/en/blog/semiconductor-shortages-could-result-in-higher-farm-and-construction-equipment-prices-R892766>

6. <https://www.stuff.co.nz/national/politics/126038965/millions-of-cubic-metres-of-logs-leave-our-shores-every-year--all-while-we-remain-desperately-short-of-timber>  
<https://www.rnz.co.nz/news/business/448022/backlog-at-ports-leads-to-frustration-there-s-a-huge-issue-within-our-sector>

7. <http://nzdotstat.stats.govt.nz/wbos/Index.aspx?DataSetCode=TABLECODE7602>

8. <https://wip.org.nz/supply-and-demand/>

**Figure 3: Construction labour shortages are at their highest since 1975**



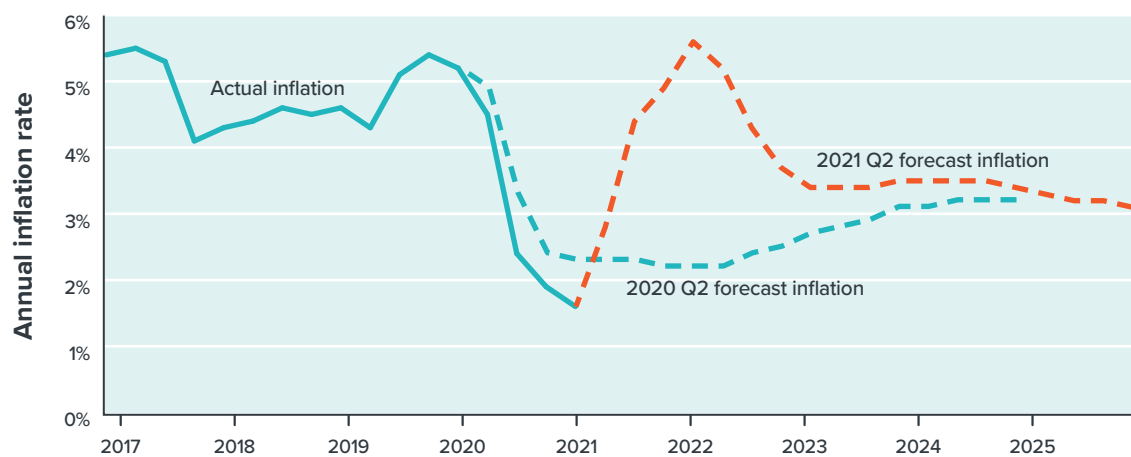
Source: NZIER, QSBO

**Cost escalation is expected to continue over the medium term**

At this time last year, forecasters were expecting construction cost inflation to slow rapidly due to falling demand. Now, rapid cost escalation is expected due to high demand and limited availability of materials and labour (Figure 4).

Cost estimator Rider Levett Bucknall (RLB) expects non-residential building costs to rise 18% over the next four years. A project that costs \$100m today will cost at least \$118m by then. But history warns that this could easily prove to be a best-case scenario. If it is not possible to unblock global and local supply chains and train and recruit the workers we need, further cost escalation and project delays are likely to be on the horizon.

**Figure 4: Non-residential construction costs are now expected to surge rather than dampening down**



Source: RLB Forecast Report 95 and Forecast Report 98<sup>9</sup>

9. <https://wip.org.nz/supply-and-demand/>