

## Effect of Conflict on Construction Costs

A couple of months ago I looked at the rising costs in the construction industry, I wanted to follow this up to see how things are progressing. Energy costs are an important issue affecting construction material production in addition to supply chain constraints due to the conflict in Ukraine. I wanted to explore how this conflict has affected construction costs, main findings include:

- In early 2022 material price escalation was falling from the pandemic highs in 2021, however the conflict in Ukraine has come pushed prices back up.
- Materials that are energy intensive to produce are showing increases, materials such as cement, concrete, bricks, plastic pipes, insulation etc...
- Pre-pandemic cost of energy for the production of materials accounted for between 20/30% of the production cost. This percentage cost will increase especially in Europe where energy has been dependant on Russian supplies.
- There has been a reliance on Russian, Belarusian and Ukrainian steel in European supply chains.

Please feel free to follow the link below for further information.

<https://jamesbeckwith121713271.wordpress.com/2022/10/25/effect-of-conflict-on-construction-costs/>

## Effect of Conflict on Construction Costs

A couple of months ago I looked at the rising costs in the construction industry, I wanted to follow this up to see how things are progressing. Arcadis have recently issued their “Half Year Market View” report. This is well worth a read. This report highlights energy as an important issue affecting construction material production in addition to supply chain constraints due to the conflict in Ukraine. I wanted to explore how this conflict has affected construction costs.

### Pandemic

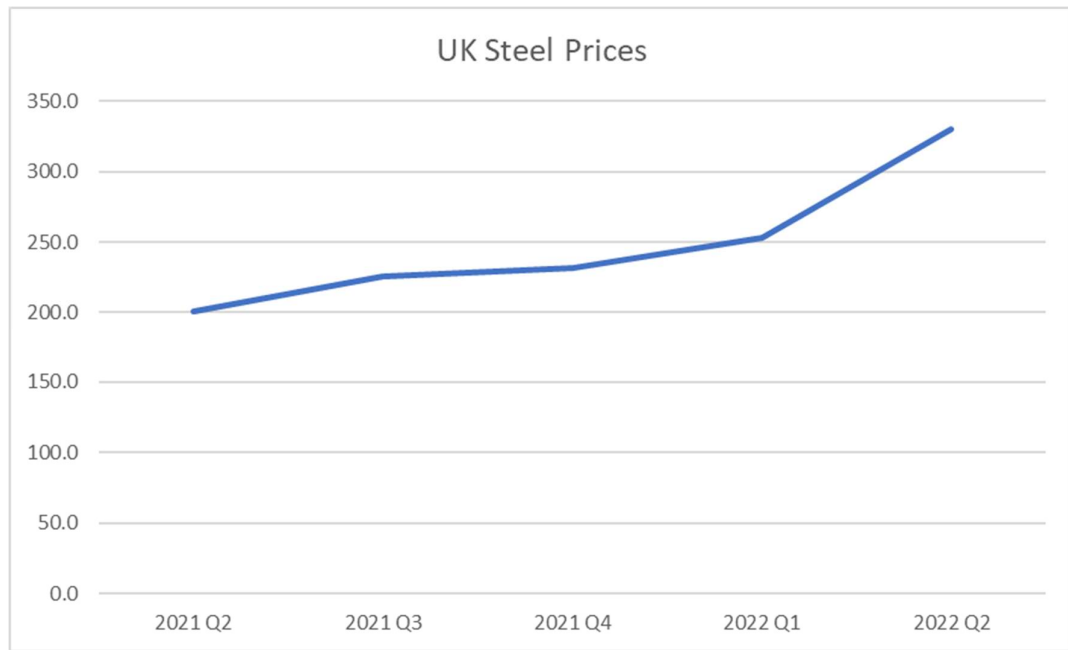
Arcadis report that in early 2022 material price escalation was falling from the pandemic highs in 2021, however the conflict in Ukraine has come as a second shock driving prices back up.<sup>1</sup> The example identified is that of Steel, in Australia steel and timber prices were falling in late 2021, however increased markedly in March 2022.<sup>2</sup> The experience in the UK isn’t as clear cut, in that costs never fell in 2021, but the sharp increase in 2022 was still felt. This can be seen in the costs for basic iron and steel records held by the office for National Statistics with a rise of 42% between Q42021 and Q2 2022.<sup>3</sup>

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<sup>1</sup> Arcadis, The shadow of Stagflation, October 2022, <https://www.arcadis.com/en-au/knowledge-hub/perspectives/australia/2021/australian-construction-market-view>

<sup>2</sup> Arcadis, The shadow of Stagflation, October 2022, <https://www.arcadis.com/en-au/knowledge-hub/perspectives/australia/2021/australian-construction-market-view>

<sup>3</sup> Office of National Statistics, UK, Basic Iron and Steel and of Ferro-Alloys for Domestic Market, October 2022, <https://www.ons.gov.uk/economy/inflationandpriceindices/timeseries/ew6t/mm22/previous>

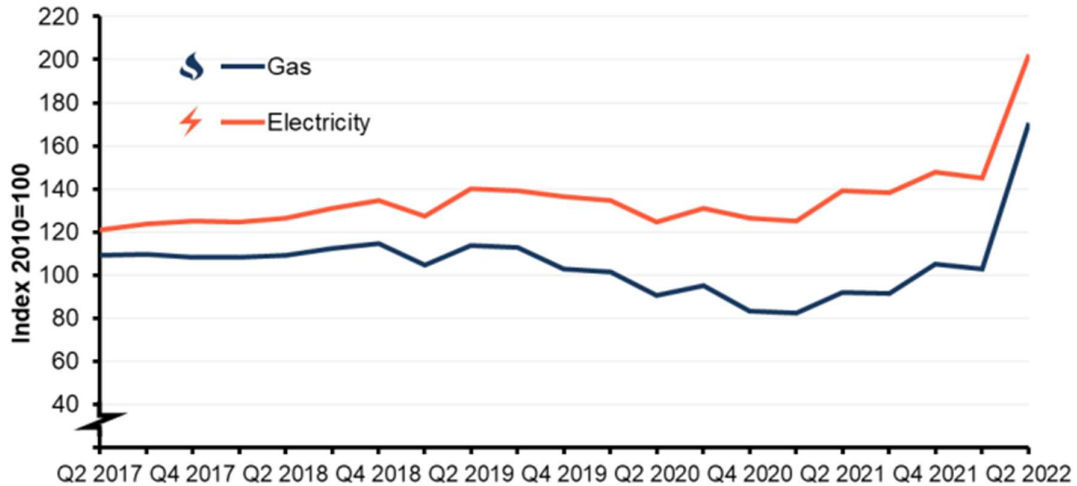


#### Material Supply & Energy

Arcadis go on to report that materials that are energy intensive to produce are showing increases, materials such as cement, concrete, bricks, plastic pipes, insulation. Pre-pandemic cost of energy for the production of materials accounted for between 20 to 30%<sup>5</sup> of the production cost. This percentage cost will increase especially in Europe where energy has been dependant on Russian supplies. This increase can be seen in records kept by the Department for Business, Energy & Industrial strategy in the UK showing approximately a 40% rise in costs for electricity and gas between Q4 2021 and Q2 2022.

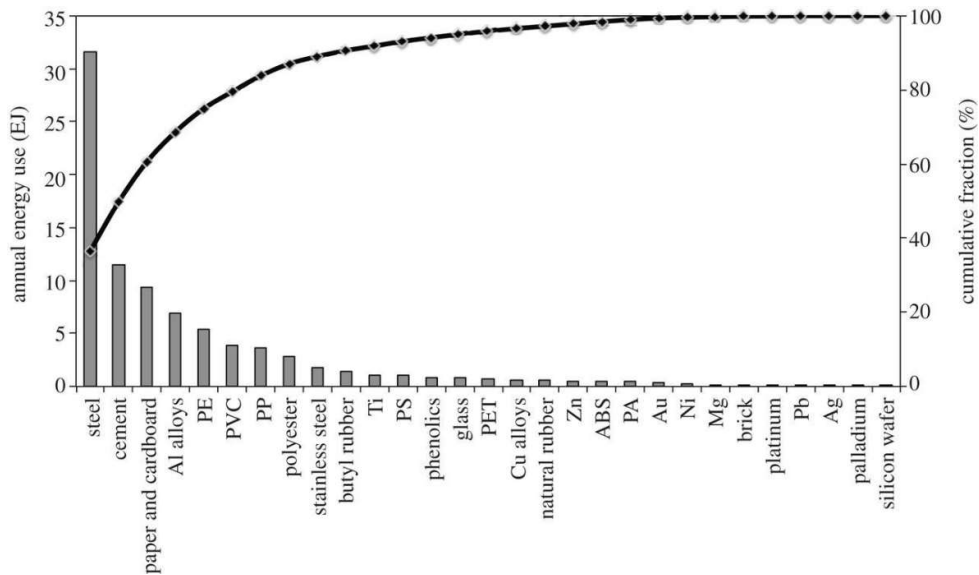
<sup>4</sup> Office of National Statistics, UK, Basic Iron and Steel and of Ferro-Alloys for Domestic Market, October 2022, <https://www.ons.gov.uk/economy/inflationandpriceindices/timeseries/ew6t/mm22/previous>

<sup>5</sup> Arcadis, The shadow of Stagflation, October 2022, <https://www.arcadis.com/en-au/knowledge-hub/perspectives/australia/2021/australian-construction-market-view>



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Other energy intensive materials which may be affected by this price rise have been listed below though it is steel production that is significantly energy intensive, and it is steel that saw a 30% increase in March 2022<sup>7</sup> corresponding with the prolonged effect of the conflict rather than pandemic related issues.



- Steel
- Cement
- Concrete
- Paper/Cardboard
- Alloys

<sup>6</sup> Department for Business and Industrial Strategy, UK, quarterly Energy Prices UK April to June 2022, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1107499/quarterly\\_energy\\_prices\\_uk\\_september\\_2022.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1107499/quarterly_energy_prices_uk_september_2022.pdf)

<sup>7</sup> Arcadis, The shadow of Stagflation, October 2022, <https://www.arcadis.com/en-au/knowledge-hub/perspectives/australia/2021/australian-construction-market-view>

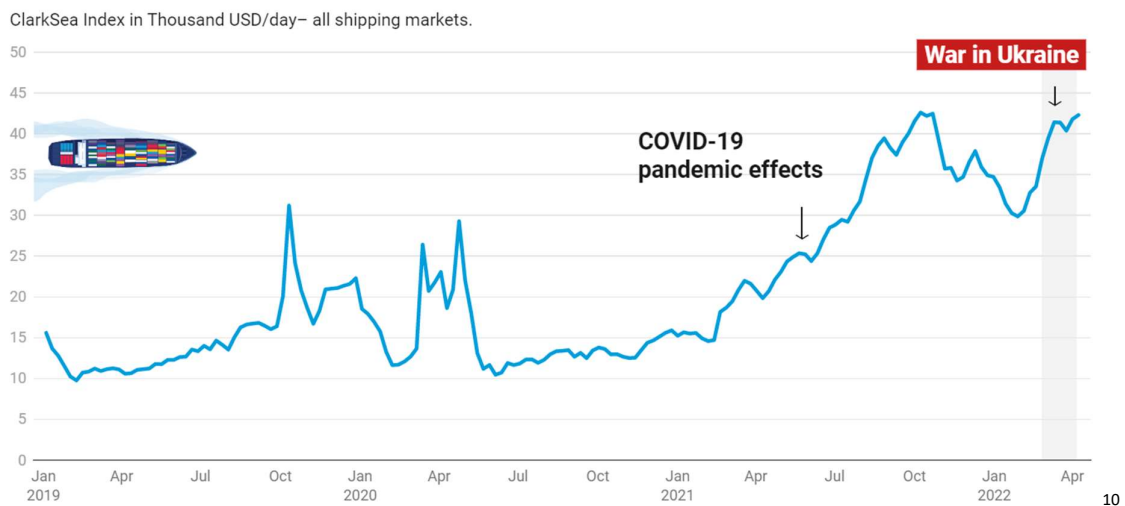
- PVC and plastics
- Polyester/Insulation
- Stainless steel<sup>8</sup>

### Sanctions

Further to the energy squeeze, Turner and Townsend note that “after China, Ukraine and Russia are the second and third biggest exporter of steel”. Belarus is also a big producer but is also subject to sanctions. Due to this, suppliers are looking to Asia to fill the supply gaps, exposing their supply chains to not only the increasing energy cost in production but also the increasing cost of freight.<sup>9</sup>

### Freight

The ClarkSea Index for shipping is showing a rise in Q1/2 of 2022 increases related to the conflict in Ukraine. A copy of their output has been shown below:

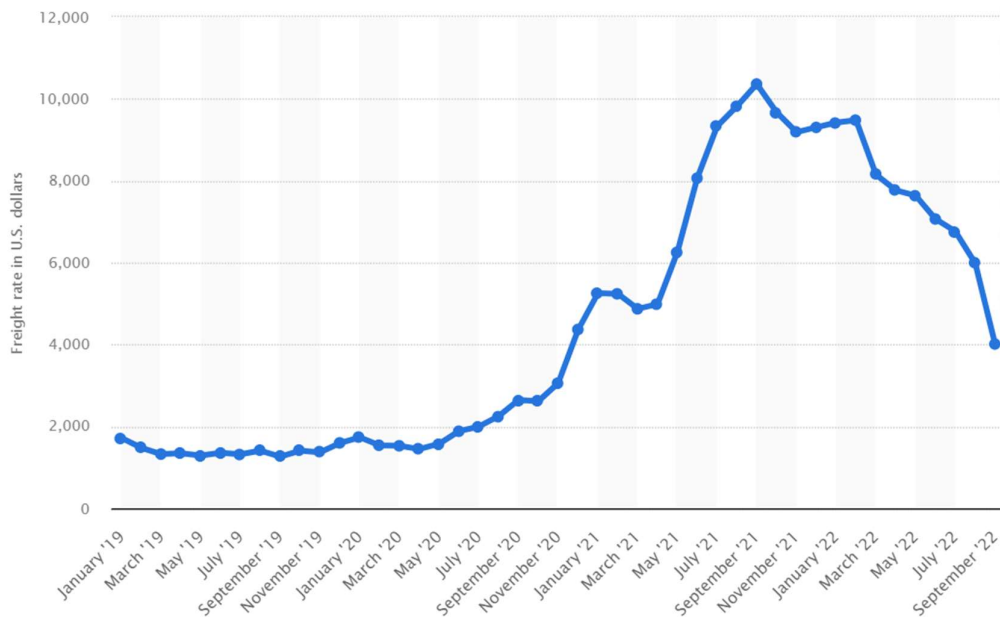


However, Statista is showing a decrease in freight from May 2022, though freight costs are still at a high level.

<sup>8</sup> The Royal Society, The energy required to produce materials: constraints on energy-intensity improvements, parameters of demand, March 2013, <https://royalsocietypublishing.org/doi/10.1098/rsta.2012.0003>

<sup>9</sup> Turner and Townsend, War in Ukraine: assessing the impact on European construction, April 2022, <https://www.turnerandtowntsend.com/en/perspectives/war-in-ukraine-assessing-the-impact-on-european-construction/>

<sup>10</sup> United Nations Conference in Trade and Development, War in Ukraine raises global shipping costs, stifles trade, June 2022, <https://unctad.org/news/war-ukraine-raises-global-shipping-costs-stifles-trade#:~:text=The%20report%20says%20between%20February,in%20consumer%20food%20prices%20globally.>

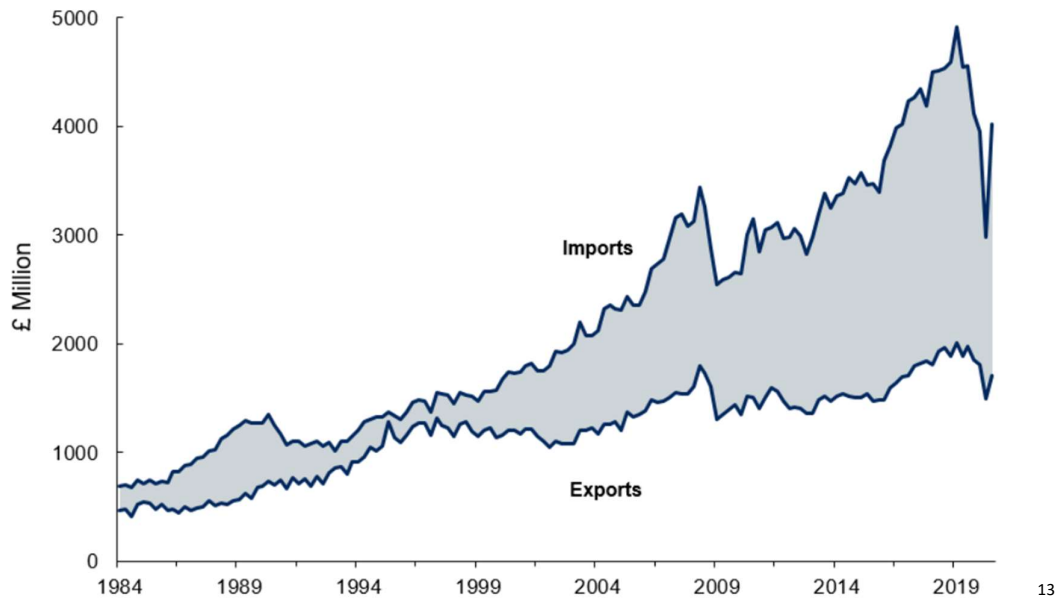


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All materials are transported to site or factory and these costs effect all projects however materials that are regularly imported will be mostly affected. The UK imports approximately 15 million tonnes of sand and gravel, 3000-4000 cubic metres of concrete, 150m to 200m bricks and 6000m2 of blocks<sup>12</sup> the costs for all of these materials will be subject to freight fluctuations. The UK Construction and Manufacturing Industry imports far more that it exports and the industry will therefore be sensitive to these pressures.

<sup>11</sup> Statista, Global container freight rate index from January 2019 to September 2022, Accessed October 2022, <https://www.statista.com/statistics/1250636/global-container-freight-index/>

<sup>12</sup> Department for Business and Industrial Strategy, UK, Monthly Statistics of Building Materials and Components, November 2020, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/940723/20-cs12\\_-\\_Construction\\_Building\\_Materials\\_-\\_Commentary\\_November\\_2020.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/940723/20-cs12_-_Construction_Building_Materials_-_Commentary_November_2020.pdf)



<sup>13</sup> Department for Business and Industrial Strategy, UK, Monthly Statistics of Building Materials and Components, November 2020, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/940723/20-cs12\\_-\\_Construction\\_Building\\_Materials\\_-\\_Commentary\\_November\\_2020.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/940723/20-cs12_-_Construction_Building_Materials_-_Commentary_November_2020.pdf)