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## Editorial

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This special issue was thought of to convene leading specialists in the North American automotive industry to analyse their present and likely future scenarios with the entry into force of a new trade agreement (USMCA), along with the confluence of COVID-19 and the dual transition towards a new mobility paradigm – ACES or autonomous, connected, electric and sustainable – and the digital technologies of Industry 4.0 (I-4.0).

All these phenomena convey great challenges to the industry. The USMCA contains a new set of rules of origin and labour value content meant to alter the flows of investment, jobs, and trade between the three countries. The COVID-19 pandemic has impacted greatly on the sector, which, amid border closures and greater restrictions on the flow of people and goods, has experienced interruptions in its supply chains. The addition of I-4.0 to the transition towards an ACES paradigm has intensified a debate on the probable impact of these technologies not only on the sustainability of the industry, but also on jobs, foreseeing high levels of displacement and substitution.

Considering these elements, we envision an industry that will undergo critical evaluations, transformations, and decision-making processes. The collection of studies we offer – i.e., six papers from a larger number of authors – work on the above topics from a broad array of focuses and perspectives. All in all, we have a rich thematic issue

that comprehensively covers such topics while shedding light on some of the most pressing challenges impacting the industry and questioning its future at both the regional and national levels.

Two papers set the stage of the discussion by introducing transcontinental perspectives.

Klier and Rubenstein ask if North American and European FTAs have changed the relevance of the traditional principles of agglomeration and economies of scale in firms' location decisions. By documenting the geography of production of vehicles and powertrains in North America and Europe during NAFTA and the enlargement of the EU, they show that there has been little change to the share of either vehicles or powertrains imported from outside both regions. This means that the forces shaping the industry tended to prevail and vehicles tend to be assembled in the region in which they are sold.

Taking advantage of local variations in factors of production, automotive manufacturing regional integration increased while Mexico and Central and Eastern European countries share of production in North American and EU, respectively, rose notably. In other words, they state, the so-called integrated peripheries are the major beneficiary of FTAs.

Will this position be altered by the most stringent and complex rules of origin set for the USMCA? The historical evidence says otherwise so that the most likely outcome of the new treaty will be the deepen of such regional integration.

Goracinova, Galvin and Wolfe study the emerging-converging models of networked industrial policy (NIP) – i.e., the latest stage of IP – in the USA and Germany, which spring out of governments' needs to reposition their automotive domains in the transition to a new technology paradigm and trade regime. NIP includes long-term planning, the promotion of coordinated networks and regional clusters, the preferential funding of SME, the creation and diffusion of I-4.0 technologies, as well as environmental and labour market programs to the point of strengthening innovation systems, developing research institutions, fostering public-private collaboration, and aligning strategic priorities.

While the shift to a new paradigm gains momentum, and as NIP targets a more effective integration of research, innovation and production, semi-periphery jurisdictions as Canada risks being relegated to a more limited assembly role. A position that can worsen under the USMCA's regional content requirements as it is unclear how North American manufacturers will source the batteries required by EVs in an industry dominated by Asian producers.

Based on evidence from Canada, Carey and Mordue study the degree to which firms are enhancing their competitiveness through I-4.0. They show that few firms are making investments in these technologies –in many instances in basic tools – so that there is not – or just a modest – upgrading nor spurring economic resilience processes. As a result, instead of year-over-year growth – i.e., sectoral resilience – there is a resistant growth pathway in its auto sector. Their findings enable them to put under question the growing hype about I-4.0 and its capabilities to back industrial upgrading and economic development in the sector's semi-periphery and integrated periphery jurisdictions.

Against this backdrop and the forecast of the above studies, Carrillo, Vallejo and Gomis found out a quite different situation in the Mexican auto industry. First, they see a “good progress in both first-tier suppliers and MSA (manufacturing support providers) firms towards the I4.0 transformation”. Second, they found that “... COVID-19 seems to

have triggered an acceleration of firms' digitalisation plans to adopt I4.0 technologies". This is important for the 'Global South' because – they contend – "... I4.0 shifts the competitive advantage of manufacturing activities towards technology-based competitiveness and away from cheap labor".<sup>1</sup> Still they are cautious to warn that "the analysis of the Baja California region's I4.0 data indicates that the level of knowledge of I4.0 technologies among auto parts firms is limited ...".

This opens the question as whether an integrated periphery – say Mexico, could be doing in terms of I-4.0 what a semi-periphery – say Canada – is not. It is a relevant question as México is not supposed to have features that Canada has and the specialised literature considers it to be critical for the development of the complex processes and systems incumbent in I-4.0. That is own and headquarter large parts suppliers, a well-educated workforce, and government's innovation-centred policies along a set of programs to support digital technologies adoption.

Holmes analyses the current state of the industry in Canada and asks how it might respond to the challenges posed by supply chain weaknesses exposed by COVID-19, the more complex USMCA automotive rules of origin, and technological disruption associated with the transition to electric vehicles. Against the interpretations that characterise Canada as a semi-peripheral auto producing and tie its future to that position, he contends that Canadian industry "... overwhelmingly concentrated in Ontario, (...) is fully integrated into the cross-border Great Lakes automotive production region (GLR). (So that) The fortunes of the Ontario industry are reliant on the continued vitality of this broader region (...)". Holmes maintains that the USMCA rules "will reshape the geography of the regional industry to the benefit of the United States and Canada". Therefore, a better future for the GLR in terms of investment and employment is expected, as well as a more localised sourcing spurred by the COVID-19's supply chain disruptions. Furthermore, in his account, the GLR is well-positioned to grasp the resources of the EVs transition.

In Mexico there is a new labour law and a wage policy mean to support a new labour relations model, a goal pressured by an unusual set of labour rules and enforcement mechanisms provided by the USMCA. Bensusàn Areous, Covarrubias Valdenebro and González Nicolas investigate the extent of the progress in such model by assessing the way in which unions are responding to its demands. Based on primary evidence of union leaders, they contend that the adaptive capacity of corporatist unions could prevent the new labour model from succeeding. Still, as the GM Silao case showed recently, the battle to overcome the old model of fake/intervened labour relations has started and the only thing for sure is that it is going to be a heated-disputed arena.

On the other hand, they see that, against USMCA goals, competitors will circumvent the higher entry barriers established in it to locate themselves en masse in Mexico. Thus, they point out, in a boomerang effect scenery, against the new rules of origin and labour provisions, jobs and investment would continue to gravitate towards the MAI.

## Notes

- 1 The concept of periphery is not in the repertoire of Carrillo et al. They talk in terms of 'Global South' and 'Global North' "as a more open and value-free alternative". This seems to correspond to their ideas that the MAI is no longer a low-cost platform but an integrated chain, 'diversified in product and technological diversification'.