# Introduction

On May 12, 2021, Israel signed a free trade agreement (FTA) with South Korea (henceforth, Korea). Once the agreement comes into effect, vehicles and spare parts imported from Korea will be exempt from the seven percent customs duties generally levied on imports.[[1]](#footnote-1) Presently, this exemption is already enjoyed by the United States, Canada, Mexico, Turkey, and the member countries of the European Union.[[2]](#footnote-2) Korea is the eleventh largest economy in the world, and the first Asian country with which Israel has signed an FTA.[[3]](#footnote-3) In particular, Korea is a large producer of cars, with the Hyundai-Kia group enjoying a significant share of car sales in Israel (see **Figure 1a**), and although not all Korean cars are produced domestically, direct imports from Korea constitute around 18 percent of yearly car imports (see **Figure 1b**). Being fully import-based, prices in the Israeli car market are especially affected by changes in the structure of trade between Israel and the producing countries through changes in exchange rates, tariffs and trade agreements. This paper aims to predict the effect of the FTA on the share of imports from Korea and on equilibrium prices in the Israeli market for first-hand private vehicles.

In the absence of a local vehicle manufacturing industry, the Israeli car market is based on imports only. The most significant import channel is that of commercial imports, controlled by a number of official importers, with personal imports amounting to a limited number of vehicles (1,154 in 2018, in comparison to 261,248 commercial imports in the same year – see **Figure 2**).[[4]](#footnote-4) This makes it possible to rely fully on import data supplied by the Israel Vehicle Importers Association for the years 2018-2021 to estimate dynamics in the demand for new vehicles.[[5]](#footnote-5) We combine this data with vehicle prices made available by the Israeli governmental databases website.[[6]](#footnote-6)

In order to answer the research question, we assume that demand follows the random coefficient logit model of demand, and employ a BLP demand estimation method to estimate mean utility weights and random coefficients.[[7]](#footnote-7) We do this using the R package BLPestimatoR, available on CRAN.[[8]](#footnote-8) On the supply side, we assume that importers optimize over all their car models with respect to a Nash-Bertrand pricing model, and thus compute markups and back out marginal costs. Finally, we adjust the marginal costs of Korean-produced cars to reflect the removal of the customs duty, and re-solve for the new equilibrium accordingly.

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Notice that not all Hyundai-Kia cars are produced in Korea. In fact, many Hyundai cars are imported from Turkey and some Kia cars from Slovakia. Trade regulations in Israel state that even if the vehicle itself is not imported directly from a country without a trade agreement, but many parts of it are manufactured in it - the vehicle will still be charged 7% at customs. Thus, electric vehicles with batteries manufactured in Korea are subject to a customs fee too. Data limitations do not allow for such identification and therefore we will only focus on vehicles imported from Korea as affected by the trade agreement. Such an estimation may underestimate the impact of the agreement on the Israeli car market and given a more detailed database different results may have been obtained.

To the best of our knowledge, this paper is the first to use the Israel Vehicle Importers Association’s database for an economic study of the Israeli first-hand vehicle market, and in particular the first to make use of it for a BLP estimation of demand for cars.

Previous literature has found prices to be relatively unresponsive to changes in marginal costs in the automobile industry. Goldberg (1994) finds that reduced production costs from producing in Mexico rather than in the United States would have little effect on prices.[[9]](#footnote-9) Park and Rhee (2014) simulate the effects of FTAs signed by Korea with the United States and with the European Union, and predict that growth in foreign vehicles’ market shares will be limited. Tovar (2012) does find a reduction in automobile prices in Colombia following a free trade reform that involved tariff reductions, but this setting differs from the one studied here in that the reform led to a significant increase in competition through the entry of a large variety of foreign models, with the market previously being dominated by domestic firms. Our paper can contribute to these works on tariff reductions in the automobile industry by studying a market that is already entirely import-based, and is in a more recent setting.

# Data

The data required to answer the above question consists of the following basic variables: market shares, prices and product characteristics. Data used in this paper is obtained from two main sources: monthly sales data, starting from January 2018, which is made available by the Israeli vehicles importers Association and yearly price list for new imported vehicles from the governmental databases website. Both have been merged based on model code, production line, and year of production. Since we are interested in the main car market, we only keep observations of private vehicles and those whose price does not exceed 750,000 NIS. We aggregate sales data by quarter with the aim of reducing noise and obtaining more consistent results. We believe that the use of quarters best satisfies the trade off between obtaining higher variation and avoiding unclean variance. Markets are defined, accordingly, as all car sales in a quarter. To avoid unique types of cars, we keep observations with 10 sales or more in a quarter. We end up with XXXX observations in 13 markets. To complete the market share definition we use CBS annual publications on the number of people with a type B driving license (private car up to 3.5 tons) above the age of 18, which are the relevant population as the market size.

Additional data required for instruments construction was retrieved from the Bank of Israel, World Bank and OECD databases.

1. <https://en.globes.co.il/en/article-israel-and-korea-to-sign-free-trade-agreement-next-week-1001370188> [↑](#footnote-ref-1)
2. Reference to Israel’s trade agreements, chamber of commerce [↑](#footnote-ref-2)
3. <https://www.jpost.com/israel-news/israel-signs-free-trade-agreement-with-south-korea-668644> [↑](#footnote-ref-3)
4. Tax Authority, Taxation and Selected Data on the Automotive Industry in Israel, 2018 [↑](#footnote-ref-4)
5. <https://www.car-importers.org.il/> [↑](#footnote-ref-5)
6. [↑](#footnote-ref-6)
7. BLP 1995 [↑](#footnote-ref-7)
8. https://cran.r-project.org/web/packages/BLPestimatoR/index.html [↑](#footnote-ref-8)
9. Add to bibliography: Goldberg; Park and Rhee; Tovar; BLP; Nevo; Milrad; Fershtman and Gandal [↑](#footnote-ref-9)