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The Trade Agreement with South Korea and the Israeli car market

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Submitted to Dr. Alon Eizenberg

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1. 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] Presently, this exemption is already enjoyed by the United States, Canada, Mexico, Turkey, and the member countries of the European Union.[2] Korea is the eleventh largest economy in the world, and the first Asian country with which Israel has signed an FTA.[3] In particular, Korea is a large producer of cars, with the Hyundai-Kia group enjoying a significant share of car sales in Israel (around 28 percent of our database), and although not all Korean cars are produced domestically, direct imports from Korea constitute around 18 percent of yearly car imports (see **Figure 1**). Being fully import-based, prices in the Israeli car market are especially sensitive to 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. 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. We combine this data with vehicle prices made available by the Israeli governmental databases website.

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.[4] We do this using the R package BLPestimatoR, available on CRAN (except for the calculation of implied market shares, which

[1] See Israel Tax Authority regulations here: https://www.nevo.co.il/law_html/law01/501_534.htm#Seif14
[2] The full list of Israel's free trade agreements is available on the Tel Aviv and Central Israel Chamber of Commerce's website: https://www.chamber.org.il/foreigntrade/1094/1107/39106/
[3] See the Ministry of Economy and Industry press release here: https://www.gov.il/he/departments/news/il-korea-fta-180521
[4] See more formal derivation of the methodology in Berry, Levinsohn and Pakes (1995).

we perform independently).[5] On the supply side, we assume that importers optimize over all their car models with respect to a Nash-Bertrand pricing model, and thus we 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.

We find that for Korean models, almost the full reduction in marginal costs associated with the FTA is transferred to equilibrium prices – an 11.1 percent average reduction in prices – with sales increasing on average by 13.8 percent. For non-Korean models, we find a negligible price response – a decrease of 0.05 percent on average – and a similarly small increase of 0.05 percent in sales. Taken together with the Korean shares, this implies that overall sales of commercial imports grow by around two percent. Note that due to complex customs regulations and lack of more detailed data, we do not identify all vehicles that will be affected by the trade agreement with Korea. Hence, it is possible that we underestimate the full effect.

This paper is among 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 vehicle demand. Milrad (2015) uses a similar dataset, for different periods, to estimate the demand for vehicles and assess the effect of a recent green tax reform. His work applies a nested logit model which is a simple variant of the random coefficients logit model used in this paper. Issues in estimating the structure of the Israeli car market and its demand have been investigated in various frameworks, exploiting the unique structure, changes in legislation and frequent reforms in the Israeli market. Being an import-based market, and given Israel's geopolitical climate, Fershtman and Gandal (1998) examined the effect of the moderation in the Arab boycott on the car market through the entry of Asian manufacturers from Japan and Korea to compete in the market. Their calculations reveal that the main welfare gain associated with the end of the Arab economic boycott relates to an increase in variety rather than price changes.

[5] For a more detailed review and some applications, see the CRAN documentation here: https://cran.r-project.org/web/packages/BLPestimatoR/vignettes/blp_intro.html

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. 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. Like Fershtman and Gandal, Tovar also finds that welfare gains are primarily driven by variety and not by price reductions. 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.

The paper is organized as follows: section 2 describes the data, section 3 presents the empirical strategy, section 4 discusses the main results and section 5 concludes.

2. Data

The data required to answer the above question consists of the following basic variables: market shares, prices and product characteristics. The data used in this paper is mainly obtained from two sources: monthly sales data,[6] starting from January 2018, which is made available by the Israel Vehicle Importers Association and which includes an extensive list of product features, and prices of new imported vehicles, at the yearly level, provided by the governmental databases website.[7] The two data sources are merged by model code, production line, and year of production. 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 exclusive importers, with personal imports amounting to a limited number of vehicles (1,154 in 2018, in comparison to 261,248

[6] Downloaded on 21.06.2021 from https://public.tableau.com/app/profile/annia6189/viz/VehicleRegistration1stQuarter2020/sheet4

[7] Downloaded on 21.07.2021 from https://data.gov.il/dataset/mehir_yevuan

commercial imports in the same year – see **Figure 2**).[8] Thus, sales data does not include cars imported by small agencies and private individuals, which are limited and have some unique characteristics that differ from the main commercial imports.

Since we focus on demand for new cars, the data does not include sales of second-hand cars. We are interested in the main car market, and therefore only keep observations of private vehicles whose price does not exceed 750,000 NIS (note: all prices are adjusted for inflation, using 2010 as the base year). To define the market sizes, 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 – the relevant population of potential consumers in the market (for 2021, we assume a one percent increase in the market size, which is slightly slower than previous years' growth rates to account for Covid-19 effects).

The differing frequencies of the data sources presents us with a methodological choice to make regarding the frequency of our final data. A yearly frequency provides the advantage of allowing us to maintain a consistent frequency for all variables, by aggregating sales data (otherwise, for example, we might have 12 months of sales data sharing a constant price). Additionally, since far from all Israeli drivers are in the market for a new car at any given moment, a yearly frequency may be preferable to shorter frequencies in compensating for the static nature of our equilibrium model. On the other hand, shorter frequencies have a significant advantage in providing more variance in the data which can improve estimation accuracy. For example, the absence of a particular model in a certain period will drive consumers to choose complements – a choice that we would be able to observe. We choose to use a quarterly frequency in order to enjoy this advantage. We prefer this to a monthly frequency as we are not sure that the latter is not *too* short a definition for a market – a consumer may very circumstantially buy a car in one month and not another, which would perhaps add an unnecessary degree of noise. Thus, a quarterly frequency perhaps best satisfies the tradeoff between obtaining higher variation and avoiding unclean variance. Accordingly, and as we are only observing Israel, markets are defined only with respect to

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[8] Israel Tax Authority. (2018) Taxation and Selected Data on the Automotive Industry in Israel. Retrieved from: https://www.gov.il/BlobFolder/reports/tax-reviewvehicle/he/Publications_VehicleReview_vehicle2018.pdf

time as quarters. In each quarter, in order to prevent noise from unique model types, we keep only observations with at least ten sales. We end up with 6,788 observations in thirteen markets: the first quarter of 2018 until the first quarter of 2021.

Several additional smaller sources of data are used. We take daily exchange rate data, averaged to a yearly rate to fit the price frequency, from the Bank of Israel, and retrieve yearly GDP growth data from the World Bank and OECD databases.[9] Finally, we obtain customs duties data from the Tel Aviv and Central Israel Chamber of Commerce.

3. Empirical Strategy

As stated in the introduction, this paper assumes a random coefficients logit model of demand, and employs BLP demand estimation to estimate mean utility weights and their random coefficients. This involves a generalized method of moments (GMM) estimation of these parameters from product market shares. We define quarterly market shares as the number of car sales divided by the market size as specified above.

We control for a rich set of car characteristics entering the utility function. **Table 1** presents summary statistics of some variables of interest. The main characteristic is car price. Our price variable is defined in 2010 NIS, divided by 1,000 for easier interpretability of its coefficient. Since consumers differ in their sensitivity to price, we add a random coefficient on price to estimate its utility assessment distribution. Following Berry, Levinsohn and Pakes (1995, henceforth BLP) we add horsepower divided by car weight as a proxy for acceleration. A recent tax reform ranks vehicles by their safety systems and accessories and provides tax benefits to safer cars. We include this safety score as a control variable in the estimation. To account for different cars' sizes, we add indicators for cars having less than five seats and more than five seats. We assume strong segmentation for the latter since families with more than five members will have strong preferences regarding the

[9] We supplement these sources for three countries with missing data as follows: Morocco (https://www.mapnews.ma/en/actualites/economy/morocco-economic-growth-1-q1-2021-hcp), Serbia (https://tradingeconomics.com/serbia/gdp-growth-annual), and Thailand (https://tradingeconomics.com/thailand/gdp-growth).

number of seats. To account for this, we add a random coefficient to the variable indicating large cars (more than five seats). An additional control variable is the green score of the car (ranges from 1 to 15).[10] This variable is related to a large literature on consumers' utility from environmental friendliness, and as the significance of this consideration might differ widely for different consumers, we place a random coefficient on the green score as well. We include, as in BLP (1995), a quarterly time-trend to address changes in the relative valuation of the outside option. We add fixed effects for market segment categories, defined as model groups by configuration (SUV, Hatchback, Sedan, etc.) and propulsion technology (hybrid/electric or fuel ignition), to account for these features. Finally, following Nevo (2001), we control for brand fixed effects to clean any brand related preferences or other unobservables. Note that the R package used in this paper requires placing a random coefficient on the intercept, as well.

To account for the endogeneity of prices with the error term and satisfy the moment conditions of the GMM estimation, we construct a set of instrumental variables which relate to price through the supply side. Our first IV is the exchange rate (and exchange rate squared). It relates to prices mechanically, listed in the destination country currency, by changing the cost of imports, and there is no reason to believe that it enters the utility function via other channels. In line with our price variable frequency, we use yearly exchange rates matched to the currency of trade with the country of origin. An additional IV is annual GDP growth in the country of origin in the year of production. This variable reflects the economic conditions in the time of production that might affect price setting and manufacturers' production decisions. We also include the customs rates based on whether the country of origin has an FTA with Israel (0 if it does, 0.07 if it does not; no new FTAs were signed with relevant countries during our period of observation[11]).

Finally, we construct several instruments of the well-documented "BLP instrument" type, using the market segments defined above. In particular, we include the number of competitors in a segment, as well as weighted averages of horsepower and of the safety

[10] See Milrad (2015) for a detailed review of the green tax reform in Israel.
[11] Following the UK's exit from the EU (Brexit), a trade agreement was immediately signed equalizing trade conditions to those set in the European Association Agreement.

scores of the model's competitors within the segment[12]. Segment choice is based on the assumption that cars are categorized mainly by their structure. Consumers who are looking for small cars will probably consider several alternatives of Hatchback cars rather than SUVs or other large cars; thus, competition is more significant within the segment. The number of competitors is considered to be exogenous to consumers' utility from vehicles, while increasing price competition. The latter two instruments are considered exogenous to consumer utility from the particular car model conditional on the prices and features, while they do generate a response from the manufacturer which involves costs. We add several interactions between the instruments in order to provide the GMM function with more degrees of freedom and improve the quality of our estimation. Under the assumption that they are all exogenous, these interactions are selected by their joint power as predictors of price.

We begin our analysis with a simple logit model, in which we assume constant utility weights (i.e. all random coefficients equal zero). This assumption allows us to perform a simple two-stage-least-squares estimation. We use this to verify that the chosen instrumental variables are significantly correlated with price. We take the standard errors of the variables which we assume to have random coefficients as the initial guesses for the RCL estimation, which we perform next. We use modified latin hypercube sampling to simulate 1000 consumers, and let the initial guess of delta be $\log(s_j) - \log(s_0)$ of the observed data, as is the case in the simple logit model. The random coefficients enter the GMM objective function non-linearly through the simulation of mean utilities, while the utility weights enter the function linearly. A Nelder-Mead method is applied with the aim of obtaining relatively stable results. We calculate heteroskedastic standard errors for the set of estimated coefficients. Elasticities, which are key elements in the post-estimation counterfactual assessment, are derived using the market share equation specified by the model.

[12] In these weighted averages, we do include vehicles with less than 10 sales under the assumption that they similarly have an effect, albeit marginal, but we do not include the omitted vehicles worth above 750,000 NIS, as we do not expect them to be taken into account as relevant substitutes with respect to most models.

Using estimates of the own and cross price elasticities of demand and simulated market shares, we can estimate marginal costs and markups without observing actual costs. We assume that the competition between the official importers follows a Nash-Bertrand structure and that prices are determined by this structure's equilibrium outcome. Solving for the firms' first order condition we have that the marginal cost can be expressed in terms of prices, market shares, elasticities, and cross-ownership structures, all of which are available following the RCL estimation: $p - mc = (\Omega \odot \mathcal{S}(\boldsymbol{p}))^{-1} s$

Obtaining these pre-FTA marginal costs enables us to continue to the main purpose of this paper: computing the new equilibrium prices and market shares under the FTA environment. To the best of our understanding, the value of the vehicle for the purpose of tax calculations is determined based on the declared value, plus additional costs related to the import of the vehicle, such as transportation and insurance.[13] Importers declare this value in the customs house and after all taxes are paid, the vehicle is received. Thus, we assume that the FTA effect goes through marginal cost simply by reducing 0.07/1.07 of the original price from the marginal cost of Korean cars. Then, by re-solving the importer optimization problem, we get the new equilibrium prices.

4. Results

The results of the simple logit estimation are presented in **Table 2**. The first stage presents a strong correlation between price and most of the instruments mentioned above. The second stage results predict inelastic demand with the price coefficient significant but close to zero. The green score and safety score coefficients suggest that consumers may be responding to the tax benefit scheme. The entry of the green score into the utility with a negative sign is quite intuitive, as a higher green score reflects that the vehicle is more polluting and therefore more heavily taxed. The safety score goes in the opposite direction. Consider now the main RCL model presented in **Table 3**. We obtain a price mean utility weight of -0.025,

[13] See Tax Authority documentation here:
https://www.gov.il/he/departments/guides/personal_import_of_vehicles_guide?chapterIndex=3

with significant dispersion (sigma = -0.009). Note that the random coefficient reported here is negative, in keeping with the result provided by the package used. We argue that it is possible to interpret just the absolute values of these coefficients, ignoring their signs, because the simulated variations in individual utility weights are similarly distributed above and below zero.

As a demonstration of our results, we provide the main findings for the seven most popular cars in the first quarter of 2021 (based on observed market shares). Estimated elasticities are presented in **Table 4**, with own-price elasticities on the main diagonal and off-diagonal elements representing cross-price elasticities. The cross-price elasticities we obtain are positive but close to zero. An increase in the price of Hyundai Ioniq hybrid increases the market share of Toyota Corolla HSD SDN by 0.1 percent and has no significant effect on other non-hybrid cars. The demand for the super mini cars (i10 and Picanto) is slightly less elastic here. **Table 5** shows the estimated marginal costs and markups of these seven models. The first three columns refer to the pre-FTA environment. Column 7 shows that the popular models presented here enjoy much higher markups relative to price than the average in the first quarter of 2021, which is around 56,000 NIS, or 30 percent of the observed price.

Table 6 summarizes the main results of this paper: the main changes between the current equilibrium and the post-FTA equilibrium implied by our analysis. In the post-FTA equilibrium (computed on each of the 13 quarters separately with similar results), we find that Korean car prices are significantly reduced – by an average of 11.1 percent. This implies that the lower marginal costs are translated almost in their entirety to lower prices, with the average marginal cost reduction for Korean cars being 12.6 percent. This stands in stark contrast to the findings of Goldberg (1994) and Tovar (2012) discussed in the introduction. However, these price reductions do not induce much of a response from non-Korean models, whose prices decrease negligibly (by half a percent, on average). It should be noted that the responses of Korean and non-Korean imports are very consistent – the smallest percent price reduction for a Korean model is almost eight percent, while the largest percent price reduction for a non-Korean model is less than one percent. The price reductions are more than sufficiently compensated for by an increase in market share of almost 14 percent on average for a Korean model. It is interesting to note that non-Korean imports are barely affected at all, with their average shares actually increasing marginally, and thus, taken together with their similarly small price reductions, their profits are barely reduced. Thus, we can conclude that in this equilibrium, the sales of Korean imports increase at the expense of the "outside option", such as second-hand vehicles and the choice not to buy a car.

It should be noted 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, and are therefore already exempt from customs. On the other hand, trade regulations in Israel state that even if the vehicle itself is imported directly from a country with a trade agreement, but many parts of it are manufactured in a country without one, then the vehicle will still be charged a seven percent customs tax. Thus, electric vehicles – even those manufactured by non-Korean brands – with batteries manufactured in Korea, are presently subject to a customs fee even if they are imported from countries with FTAs. Our data does not allow for identification of the latter case, and therefore we consider only vehicles directly imported from Korea to be affected by the trade agreement. This is a source of noise to our measurement of the "treatment effect", and we therefore expect that our results understate the true impact of the agreement on the Israeli car market due to attenuation bias. Given a more detailed database, even stronger results may be obtained.

5. Conclusion

In this paper, we attempted to predict the effect of the free trade agreement signed with South Korea on equilibrium prices and market shares in the Israeli automobile market, using data from the Israel Vehicle Importers Association for the years 2018-2021. We find that the removal of the FTA is almost entirely passed over to prices, with Korean imports becoming 11.1 percent cheaper and 13.8 percent more popular on average. We also find that the increased market share does not come at the expense of non-Korean models, whose prices and shares barely change at all (a 0.05 percent decrease in price and a 0.05 percent increase in market share, on average).

These results are at odds with some of the existing literature on the sensitivity of prices to changes in marginal costs, and while this may be explained by the differences between the Israeli market and the markets observed in this literature – for example, the number of competitors in the market and the shares of local producers (zero in Israel) – much would still need to be done before we can have greater confidence in our results. As Knittel and Metaxoglou (2008) warn, demand estimation might be very sensitive to the choice of parameters and consumer welfare effects can vary a lot. Hence, more systematic robustness and sensitivity tests should be done. Additionally, while the Nash-Bertrand pricing model tends to do well in predicting firm behavior, more familiarity with the local automobile market would be advisable before we can place confidence in the suitability of this assumption.

Recent news reports on the car industry suggest that perhaps the most significant benefit of the FTA with Korea is its catalyzation of negotiations toward additional FTAs with China and Japan[14]. If these FTAs result in a larger number of models being imported from these countries, Israeli consumers may enjoy not only the price benefits discussed in this paper, but also the benefits of variety, which are recognized in the literature as significant, as discussed above. Therefore, a computation of the increase in consumer surplus as a result of the FTA with Korea, and perhaps as a result of potential FTAs with China and Japan while taking the entry of new models into account, could be an important avenue for further research.

[14] See, among others, Globes' review of the agreement https://www.globes.co.il/news/article.aspx?did=1001341940

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Appendix

Table 1: Summary of Key Variables

	Share (%)	Price (2010 NIS)	Horsepower/Weight	Pollution Index	Safety Index	Models in segment
Min.	0.0002	55.840	0.044	1.0	0.5	2.0
1st Qu.	0.0004	124.704	0.065	7.0	3.5	189.0
Median	0.0008	152.537	0.075	11.0	6.0	352.0
Mean	0.0024	188.003	0.078	10.1	5.3	353.9
3rd Qu.	0.0022	220.415	0.085	14.0	7.5	510.0
Max.	0.0931	741.114	0.200	15.0	10.5	829.0

Prices are in 1000's and adjusted to inflation.

Table 2: Simple Logit Estimation Results

2a. First stage results

	Coef.	Std. Error	T-value
Intercept	2094.9	133.1	15.7
ExchangeRate	-945.1	61.5	-15.4
ExchangeRate^2	109.8	7.4	14.9
CustomsDuty	-6640.9	656.4	-10.1
Number of Competitors	0.1	0.0	3.0
Competitors' Safety Index	-29.0	5.1	-5.6
Competitors' HP	0.4	0.4	1.1
ExchangeRate*CustomsDuty	1719.3	186.7	9.2
ExchangeRate*compet_safety	8.3	1.3	6.6
ExchangeRate*compet_num	0.0	0.0	-3.1
ExchangeRate*compet_hp	-0.1	0.1	-0.9

Simple logit first stage results. Note: exogenous covariates are not displayed.

2b. Second stage results

	Coef.	Std. Error	T-value
Intercept	-9.758	0.289	-33.7
Price	-0.001	0.001	-0.7
HP/weight	-7.801	1.921	-4.1
Pollution Index	-0.050	0.007	-7.3
Safety Index	0.015	0.007	2.0
Less than 5 seats	-0.562	0.102	-5.5
More than 5 seats	-0.270	0.079	-3.4
Time-trend	-0.025	0.004	-6.9

Note: Estimation includes brand and segment fixed effects and a time trend variable.

Table 3: Random Coefficients Logit GMM Estimation (BLP) Results

Linear Coefficients

	Coef.	Std. Error	T-value
Intercept	-8.538	1.811	-4.71
Price	-0.026	0.010	-2.62
HP/weight	0.703	3.074	0.23
Pollution Index	-0.023	0.104	-0.23
Safety Index	0.034	0.010	3.33
Less than 5 seats	-0.858	0.105	-8.14
More than 5 seats	0.167	0.645	0.26
Time-trend	-0.027	0.017	-1.60

Random Coefficients

	Coef.	Std. Error	T-value
Intercept	-1.521	1.059	-1.44
Price	-0.010	0.003	-3.39
Pollution Index	-0.057	0.102	-0.56
More than 5 seats	0.239	3.080	0.08

Note: fixed effects for brand and segment were also included. The addition of a random coefficient for the intercept was necessitated by the package used.

Table 4: Elasticities Matrix of Popular Models

	Hyundai Ioniq Hybrid	Hyundai i20	Kia Picanto	Toyota Corolla HSD SDN	Seat Arona	Renault Megane	Hyundai i10
Hyundai Ioniq Hybrid	-2.843	0.008	0.006	0.011	0.007	0.008	0.001
Hyundai i20	0.020	-2.081	0.007	0.010	0.007	0.008	0.001
Kia Picanto	0.018	0.009	-1.863	0.010	0.008	0.008	0.001
Toyota Corolla HSD SDN	0.020	0.008	0.006	-2.808	0.007	0.008	0.001
Seat Arona	0.018	0.008	0.007	0.010	-2.424	0.008	0.001
Renault Megane	0.019	0.008	0.006	0.010	0.007	-2.811	0.001
Hyundai i10	0.019	0.009	0.007	0.010	0.008	0.008	-1.892

Own-price and cross-price elasticities of the seven most popular models (by market share) in the first quarter of 2021.

Table 5: Pre-FTA and Post-FTA Equilibrium Features of Popular Models

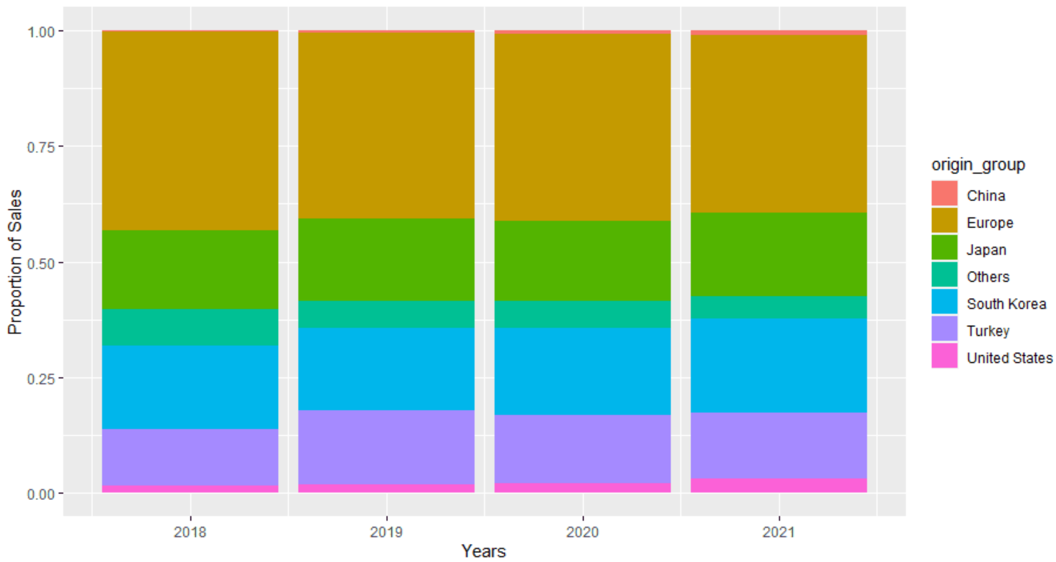
	Price	MC	Markup	FTA Price	FTA MC	FTA Markup	Markup/ Price	FTA Markup/ Price	% Change in Price
Hyundai Ioniq Hybrid	133	82	51	120	73	47	0.39	0.39	-10.17
Hyundai i20	89	44	45	89	44	45	0.50	0.50	-0.02
Kia Picanto	77	32	45	66	27	39	0.58	0.59	-14.31
Toyota Corolla HSD SDN	130	82	49	130	82	49	0.37	0.37	-0.03
Seat Arona	106	58	48	106	58	48	0.45	0.45	-0.15
Renault Megane	129	81	48	129	81	48	0.37	0.37	-0.03
Hyundai i10	79	33	45	78	33	45	0.58	0.57	-0.24

Columns 1-3 display observed prices and estimated marginal costs and markups for the same seven models of Table 4 in the first quarter of 2021. Columns 4-6 predict the same values given the FTA. Columns 7 and 8 show markups as a proportion of prices presently and assuming an FTA, respectively, and column 9 shows the predicted percent change in price given the FTA.

Table 6: Post-FTA Equilibrium Changes

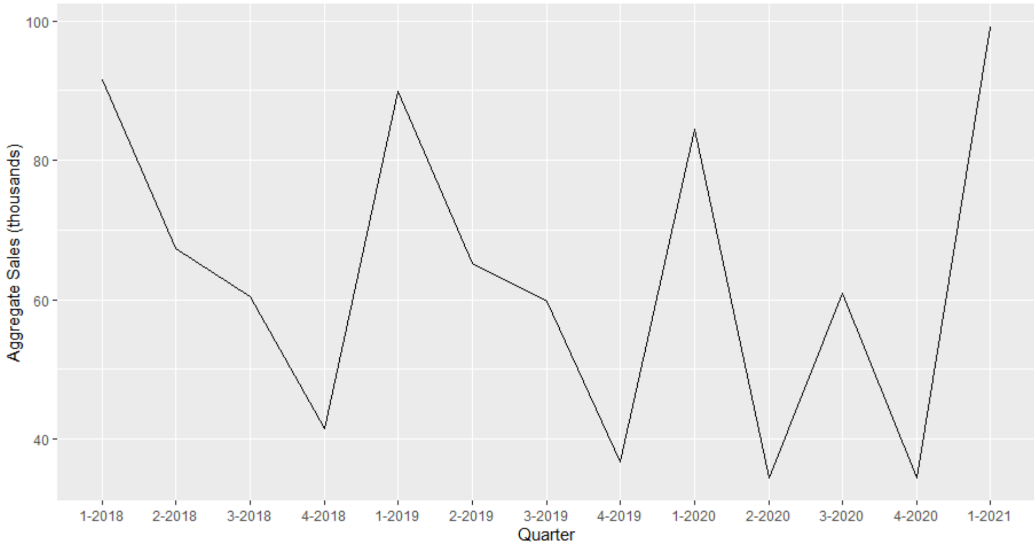
Mean percent changes	Non-Korean vehicles	Korean vehicles	Overall
Observations	6,222	566	6,788
Prices	-0.05%	-11.14%	-0.98%
	(0.067%)	(2.409%)	(3.145%)
Marginal costs	0%	-12.61%	-1.05%
	(0%)	(5.162%)	(3.790%)
Markups	-0.12%	-10.03%	-0.94%
	(0.125%)	(2.477%)	(2.836%)
Market shares	0.05%	13.84%	1.20%
	(0.087%)	(6.341%)	(4.228%)

Figure 1: Distribution of the country of origin by sales, 2018-2021



Proportion out of total commercial imports from each country or group of countries, by year. 2021 data consists only of first quarter imports.

Figure 2: Aggregate sales by quarters, 2018-2021



Number of sales of commercial imports by quarter, from the first quarter of 2018 until the first quarter of 2021.