INDICATA
PART OF AUTOROLA GROUP

INDICATA Market Watch

White Paper - Tesla Model 3 - 2024 - onwards Part 2

Assessing the impact of Tesla Model 3 de-fleet volumes on The Netherlands used car industry

Introduction

At the end of 2023 we published our first White Paper on the likely impact on the used market of the large volume of Tesla Model 3 used cars that are due to arrive back in at the end of 2024 following the large rise in new car sales in 2019.

New Tesla Model 3 sales reached 30,520 in 2019 due to governmental driven taxation benefit for company car users (hereafter “bijtelling”) where they benefit from low or no personal taxation due to the fulfilment of specific environmental requirements.

With regard to the Tesla Model 3 we have been keeping a close eye on how the used market is likely to be impacted by the surge in new car sales in 2019. In this White Paper we have an update from our initial White Paper which was published in Q4 2023 when we expected market values to reduce by -20-30%.

In this latest White Paper, we are sharing our very latest data from September 2024, which shows how the market is unfolding compared with those initial predictions in our first White Paper.

In the following pages we have included Part 1 of our White Paper which set the scene in Q4 2023 for how the oversupply of Tesla Model 3s was set to impact the Dutch market. We have then updated our predictions to include an interim overview of how the market is responding to the influx of used Tesla Model 3s.

Historical examples of used car market oversupply after a registration peak

INDICATA has analysed historic examples where registration peaks on new cars have had an impact on the used car market years later. To give us a better understanding of the severity of the impact we have analysed new car registrations and the used car market in the months where they were de-fleeted and then hit the used market. Elements that have been analysed are Volume, Prices, Stock and Market Days' Supply (MDS) which tracks whether the used car is 'hot or not' in the current market.

Here we have focussed on the registration peaks of the Mitsubishi Outlander PHEV to put into perspective what may happen to the Tesla Model S and Model 3 in future years.

Mitsubishi Outlander PHEV registration peaks 2013-2015

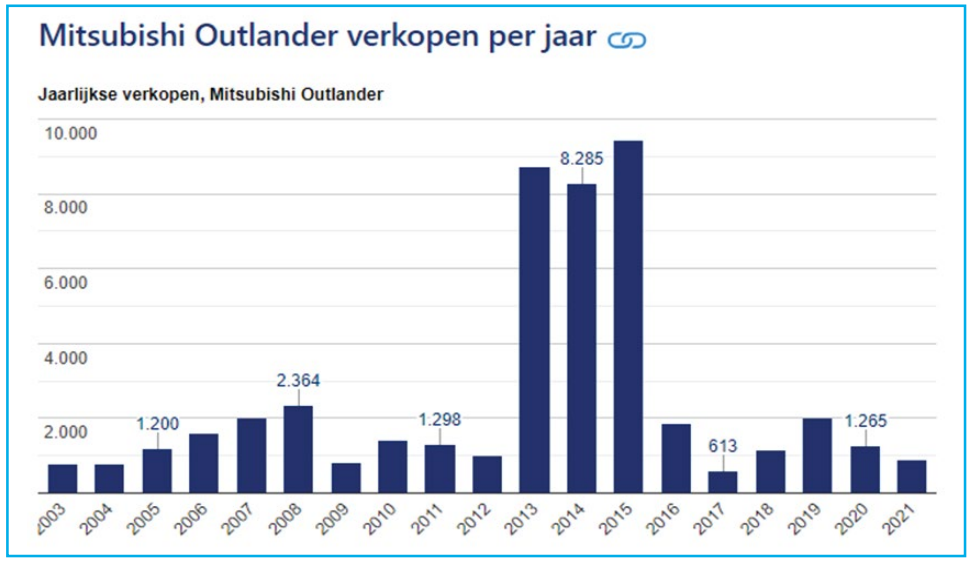
In graph 1a and 1b you will see the Outlander PHEV registration peaks between 2013 and 2015 which are caused by the "bijtelling" changes for PHEV company cars. In table 1 you can find the "bijtelling" per year, compared to a petrol car with the lower the percentage, the better.

Because of the maximum of five years of benefits, we expect that five years after the first registration peaks, the supply will be higher than normal. This will start at the end of 2018, peaking in 2019. After 2019, the supply will be consistent because of the registration peaks in 2014 and 2015 which is confirmed with the numbers in graph 1b.

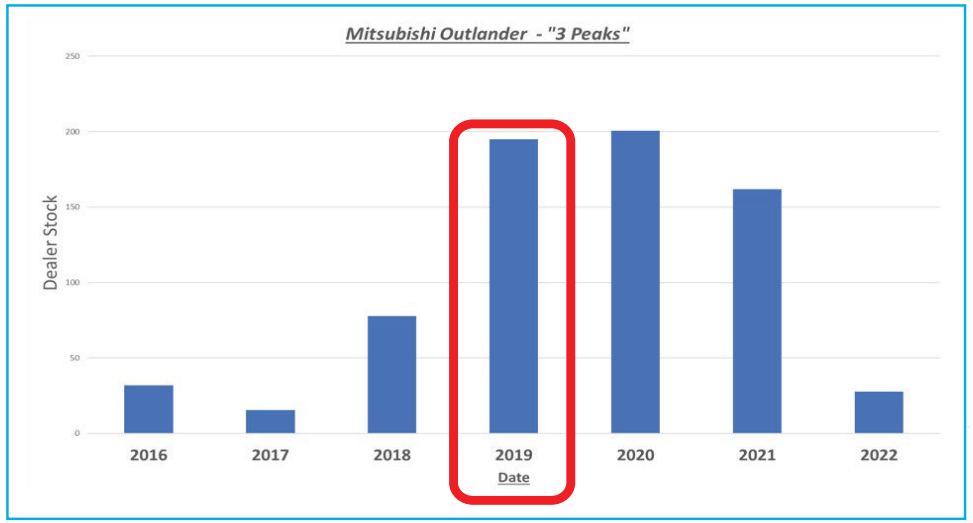
Table 1: Bijtelling PHEV car per year from rijksoverheid.nl

Bijtelling	2012	2013	2014	2015	2016	2017-2023
PHEV	0%	0%	7%	7%	15%	22%
Petrol	20%/25%	20%/25%	20%/25%	20%/25%	21%/25%	22%

Graph 1a: Registrations of Outlander PHEV (Allcijfers.nl)



Graph 1b: Dealer stock of Outlander PHEV from INDICATA



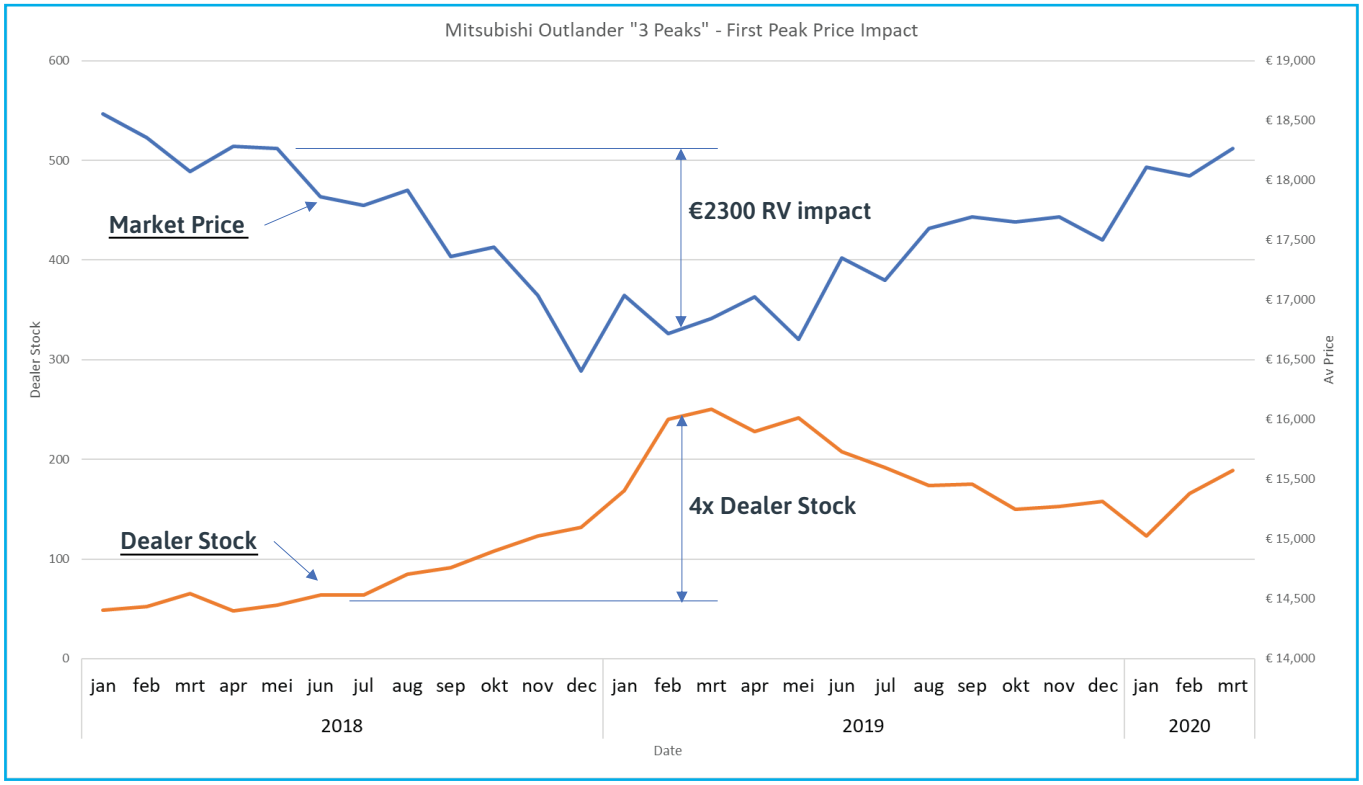
With this information, we expect an oversupply on these PHEV Outlanders on the used car market with these higher stock numbers. We also expect the oversupply because PHEV is predominantly a car driven by business users rather than private users because of its taxation benefits on company cars. Between 2015 and 2020, almost 90% of the PHEV were registered by business users[1].

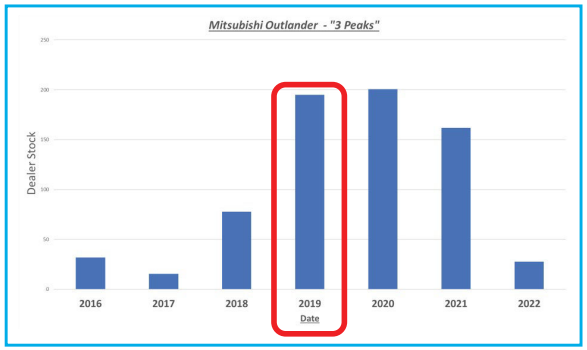
By the time the first registration peak of the Outlander PHEV came back to the used car market (2019), new PHEV registrations of private users were lower than 1%. This is due to the fact the taxation benefits for private cars (BPM) reduced from 2015 onwards[2].

We predicted that an oversupply would arise, but needed to test this to determine its impact on process and whether the residual value would drop[3].

In graph 2, we see the impact that the increased Outlander PHEV dealer stock supply has had on prices. From mid-2018 onwards, dealer stock increased by a factor of four. Meanwhile, the residual value of the Outlander PHEV dropped by -2,300 euro (a fall of 13%). As soon as dealer stocks started to fall in mid-2019 (orange line), market prices (blue line) started to increase once again which confirmed our original theory.

STEEP Impact of excess supply Outlander 5 years from 1st Peak registrations





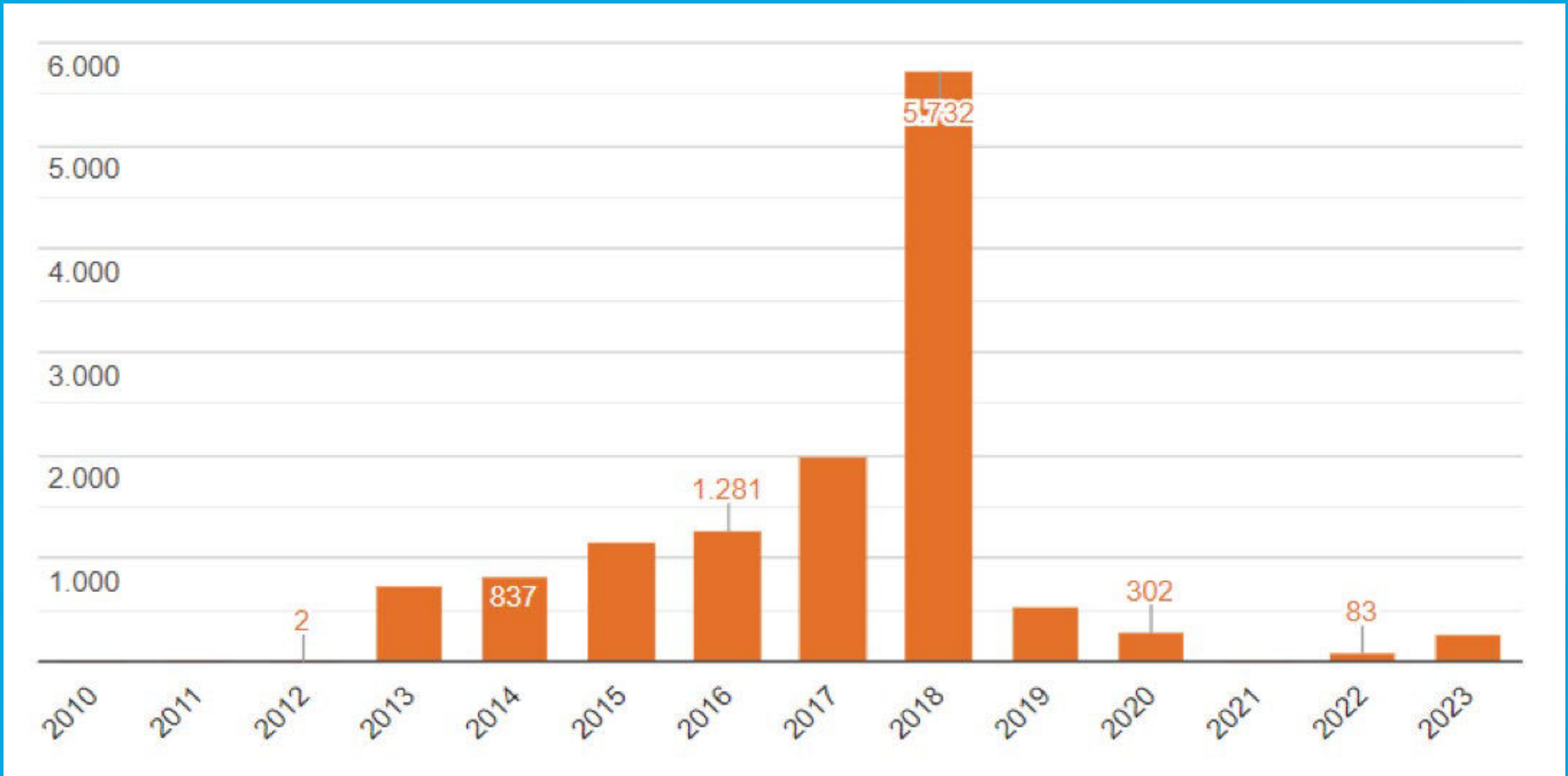
Graph 2: Stock and Prices of Outlander PHEV from INDICATA

[1] BOVAG.nl
[2] Bpm berekenen voor een personenauto (belastingdienst.nl)
[3] BCG: Past and forecasted IC sales from BCG.com

Tesla Model S

A similar situation is already ongoing for the Tesla Model S in The Netherlands.
In graph 3 you can find the Tesla Model S registration peak in 2018.

Graph 3: Registrations of Model Tesla S in NL from allecijfers.nl



This peak is because of the "bijtelling" changes for BEV company cars. In 2019 the CAP changes affected the expensive Model S. In table 2 you can find the "bijtelling" per year.

Bijtelling	2017	2018	2019	2020	2021	2022
BEV	4%	4%	4%	8%	12%	16%
CAP	-	-	50.000 €	45.000 €	40.000 €	35.000 €

Table 2: "Bijtelling" BEV car per year from rijksoverheid.nl

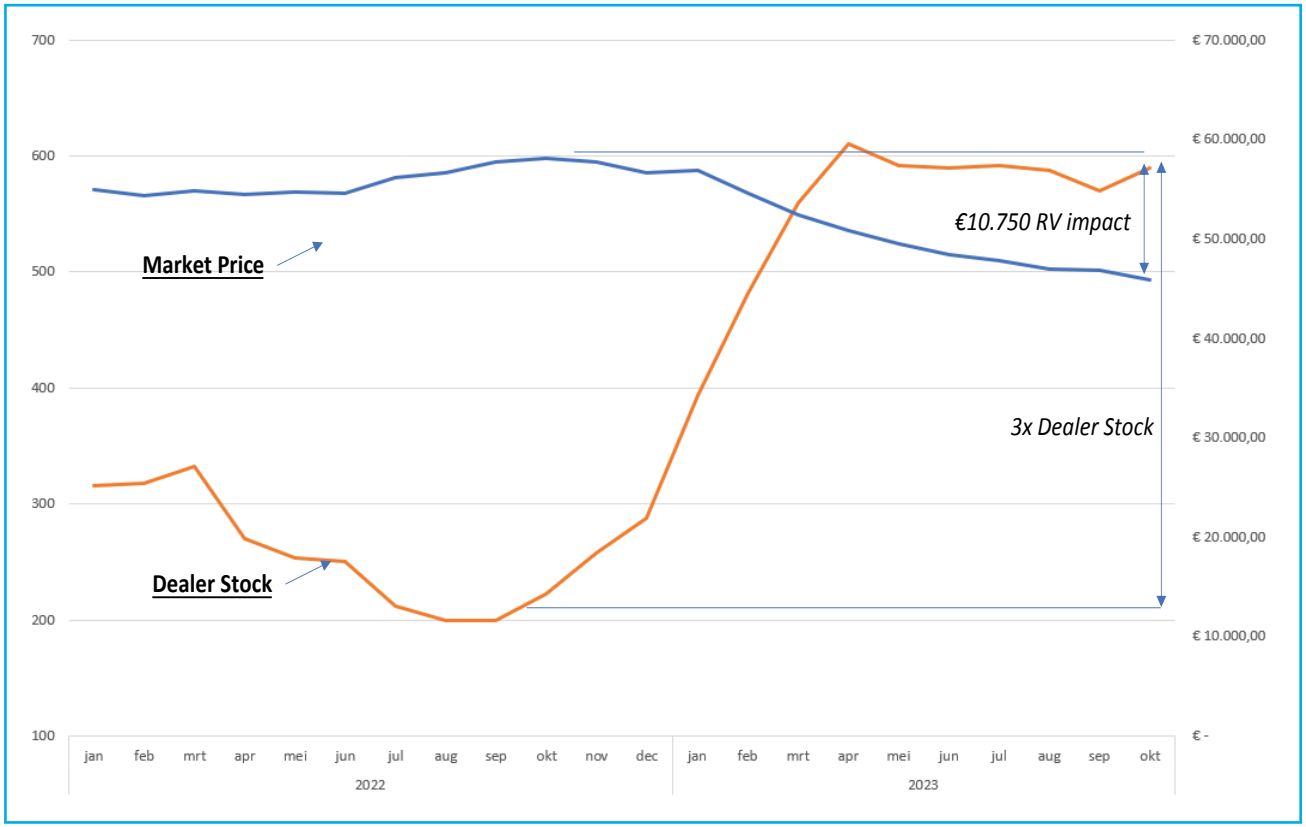
Because of the maximum five years of benefits, we expect that five years after the registration peak, the supply of used cars coming into the market will be higher than normal. For the Tesla Model S this was set to start at the beginning of 2023, because the registrations in 2018, were spread over a 12-month period. This expectation is confirmed by the market price numbers in graph 4.

Based on this data, we expect an oversupply of the Model S on the used car market based on the higher stock numbers. We also expect an oversupply because historically, BEV is predominantly a car driven by business users compared to private users because of the taxation benefits associated with company cars.

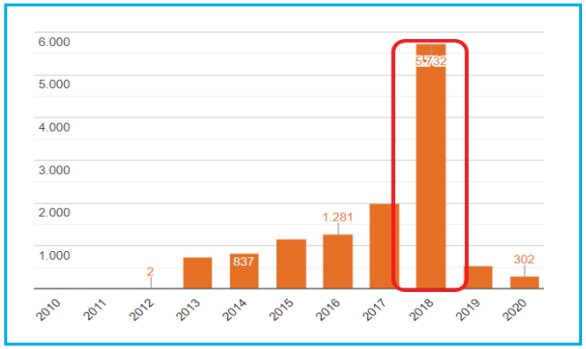
In 2022, the BEVs registrations increased to 24% of the total registrations with almost 75% of these BEVs registered by business users[4]. Based on these numbers, we can conclude that BEVs are not as popular for private users as they are for business users in the new car market.

Even with the cashback incentive for private users (on both new and used cars), BEVs are still not popular on the used (private) market[5]. Also the taxation incentives for private cars will be reduced from 2025 onwards[6], which no longer stimulate private users to choose a BEV. Therefore, used BEVs will struggle to make inroads into the private market.

STEEP Impact of excess supply Tesla Model S 5 years from 2018 (Peak registration Year)



Graph 4: Stock and Price change for Model S in NL from INDICATA



Now that we have forecast an oversupply situation, we need to test this and its negative impact on prices and RVs[7].

In graph 4, we can see the impact of the increased dealer stock supply of the Model S on prices. From the beginning of 2023 onwards, dealer stock increased by a factor of three. The residual value of the Model S dropped by 10.750 euro (-19%). The oversupply hypothesis is confirmed. Moreover, we see a strong correlation between stock increase and price and a commensurate drop in values as the Outlander PHEV.

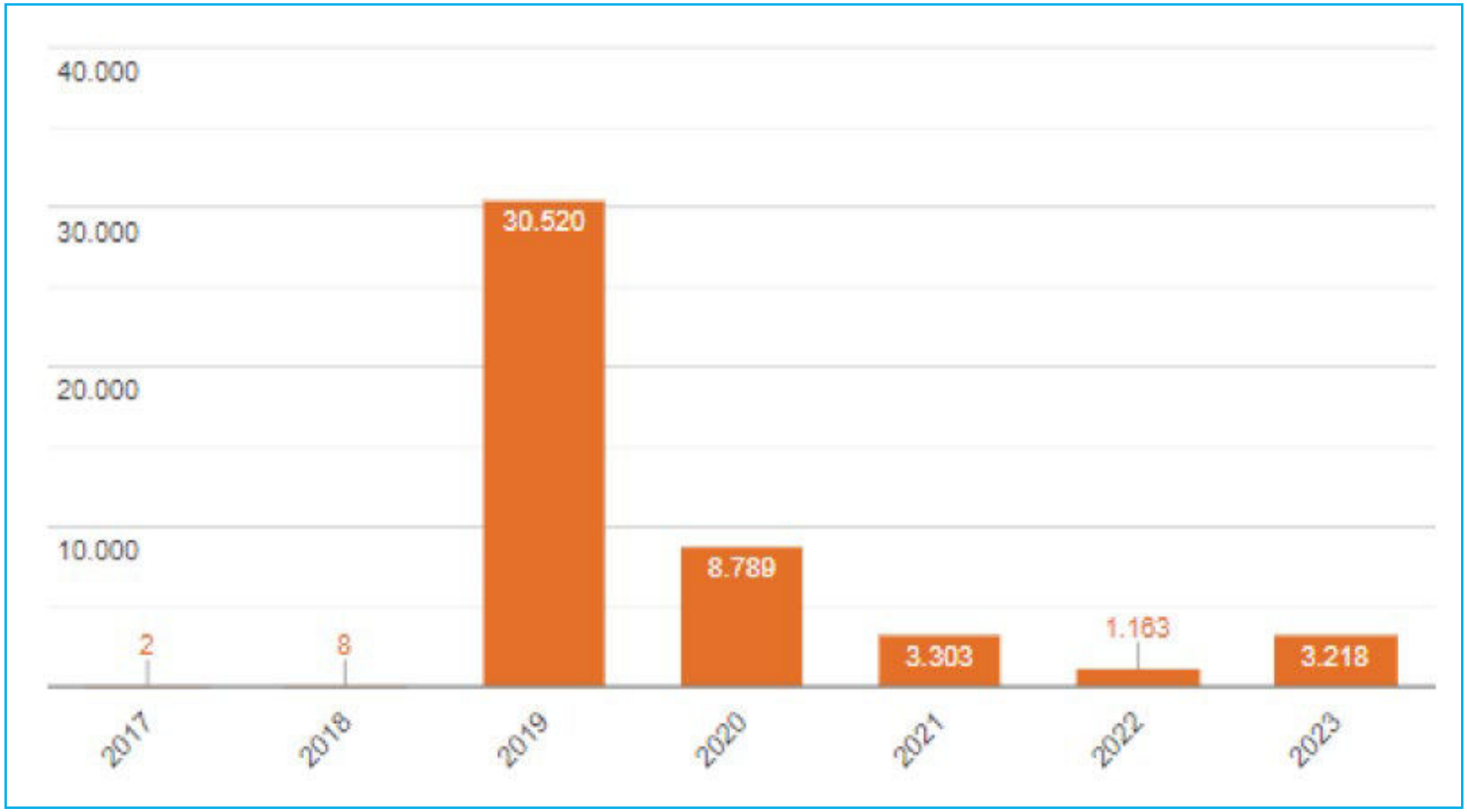
Tesla Model 3

Now we have proven that registration peaks cause an oversupply after approximately five years on the used car market and this oversupply influences used prices, we will focus on a particular case: Tesla Model 3.

The Dutch market experienced a massive registration peak for the Tesla Model 3 during 2019 and especially in December 2019 (graph 5) because of the increase of the "bijtelling" and the decrease of the CAP (table 2) in 2020. As the tax incentive will stop five years after the registration peak, it is expected that the majority of these Tesla Model 3s will hit the used car market within a very short period of time based on the majority of registrations taking place in December 2019. (This contrasts with the Tesla Model S where registrations in 2018 were spread out over the whole year).

In other words, the used car market will be flooded and there will be an oversupply of five-year-old Tesla Model 3s by the end of 2024 and beginning of 2025. Taking our experience with both the Outlander PHEV and Tesla Model S we can presume they will suffer from a commensurate fall in used values.

Graph 5: Tesla Model 3 registrations per year in the Netherlands from allecijfers.nl



Due to the booming registration peak, there is expected to be an oversupply of Tesla Model 3s (and overall electric cars) on the market and therefore the prices will drop. As we have seen in the prior examples of the Outlander PHEV and Tesla Model S, we expect after five years there will be a massive increase in stock and a decrease in prices starting at the end of 2024.

[4] In 2022 was 26 procent nieuwe particuliere auto's in Nederland geheel elektrisch - IT Pro - Nieuws - Tweakers

[5] Verkoop gebruikte EV's blijft achter - AutoWeek

[6] Bpm berekenen voor een personenauto (belastingdienst.nl)

[7] BCG: Past and forecasted IC sales

Consequences translated to short term STEEP factor

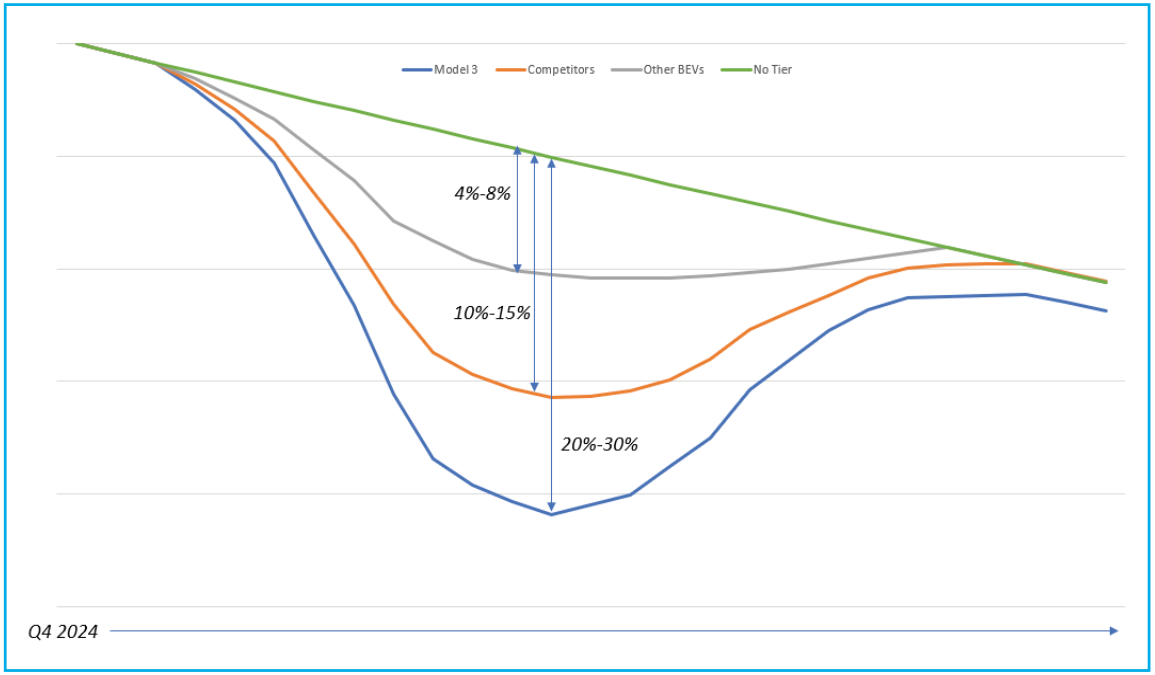
In our INDICATA Forecasting model we created the “Tesla Model 3” factor. The factor consists of three tiers with each separate tier having an impact on different kinds of used BEVs. This impact will start just before the major de-fleet of Tesla Model 3 at the end of 2024 and are set to impact the BEVs for approximately 12 months. In Graph 6 you can see the life cycle decay of the different tiers. The green line is the normal decay based on there being no “Tesla Model 3” factor in existence.

The green line on Graph 6 compares with the Model 3 (blue line) and we believe the Model 3 will not fully recover after 12 months.

The upcoming peak for the Tesla Model 3 has a major impact on the residual values of the car. Due to the huge number of cars returning from lease contracts, not only will the Tesla Model 3 be affected, but the entire electric car market will be impacted. At this stage our “Tesla Model 3” factor does not take into account the full force of the oversupply risk, but we plan to constantly review and analyse relative prices and supply over the coming months and years.

Tiers are as follows:

Tier 1	**Tesla Model 3**	extra major “oversupply” factor
Tier 2	**Model 3 competitors**	extra medium “oversupply” factor
Tier 3	**Other BEVs**	extra minor “oversupply” factor



Graph 6: Tiers for the “Tesla Model 3”-STEEP factor

The STEEP analysis focuses on the external factors that influence trends, allowing us to analyse the past and enabling us to predict the future. This analysis enables us to move away from our personal experiences and gain a better understanding of many influential factors that may affect the development of the future used car market. The STEEP analysis is data driven and we use a mix of qualitative and quantitative elements in the data collection.

Conclusion

By using INDICATA data, we have confirmed that our predictions were correct - registration peaks in the past lead to an oversupply in the future used car market. This oversupply happens approximately five years after the peak and there is a strong correlation with a fall in prices.

With these calculations and assumptions, we expect the peak in the used car market because of the 2019 registered Model 3s will start at the end of 2024 with a peak in the beginning of 2025. Moreover, this will impact the values and a commensurate residual value fall is expected in line with the Outlander PHEV and Tesla model S.

As the price of used BEVs have already dropped significantly the last 12 months, we expect an additional negative pressure of up to 25 percent on Tesla Model 3. This impact is expected to be tempered by the intense competitiveness of Teslas in the used market relative to its ICE competition. The oversupply will potentially result in the export of used Teslas into other European markets that have a more mature demand from private customers for zero emission vehicles.

White Paper -Tesla Model 3 -2024 – onwards Part 2

Assessing the impact of Tesla Model 3 de-fleet volumes on the used car industry

Trends:

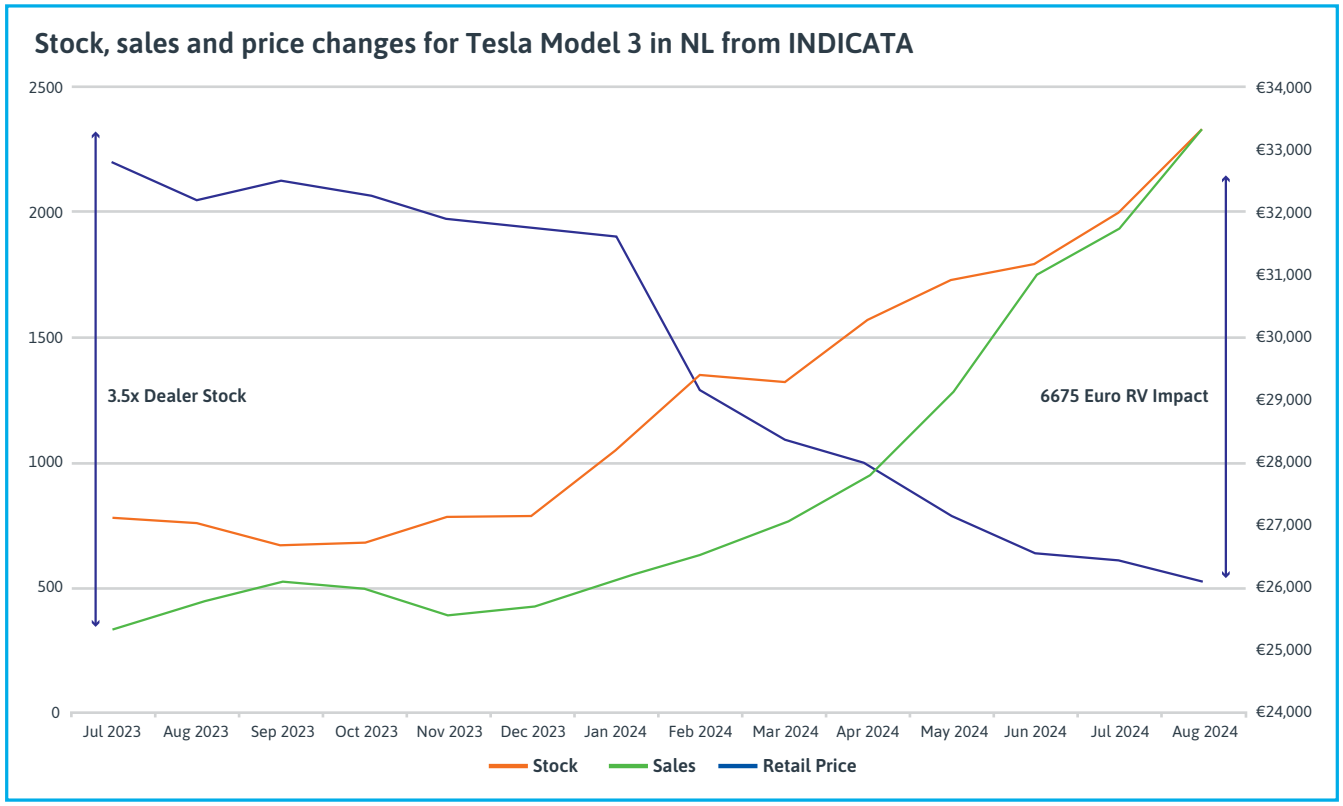
We have closely followed the predicted effects on the used market of the early inflow of Tesla Model 3s into the used market during 2024. We see that current trends in sales and stock figures and their impact on price reaffirm our expectations.

This is also consistent with the previous patterns we observed with the Mitsubishi Outlander and Tesla Model S in our first White Paper, even though it has happened earlier than expected.

The current inventory is rising while sales are not growing proportionally – supply exceeds demand - and our previous analysis of the Model S and Outlander showed similar patterns.

The **blue line** in our graph represents the pattern in price change due to the supply-demand shift. It represents the depreciation pattern we expected and predicted in the original White Paper due to the supply-demand shift. However, it has only happened earlier than anticipated.

The **orange line** shows how the levels of Tesla Model 3 stock have increased since January 2024 while the **green line** shows how sales are increasing in line stock levels, albeit staying under the orange stocking line.



Used value decline: The difference between the expected and current value was already -13 percentage points by September, an earlier price fall than initially predicted.

The market impact could, as expected, increase further, up to an additional 30% on the back of residual values already falling by 6,675 Euros.

Conclusion

Market Outlook:

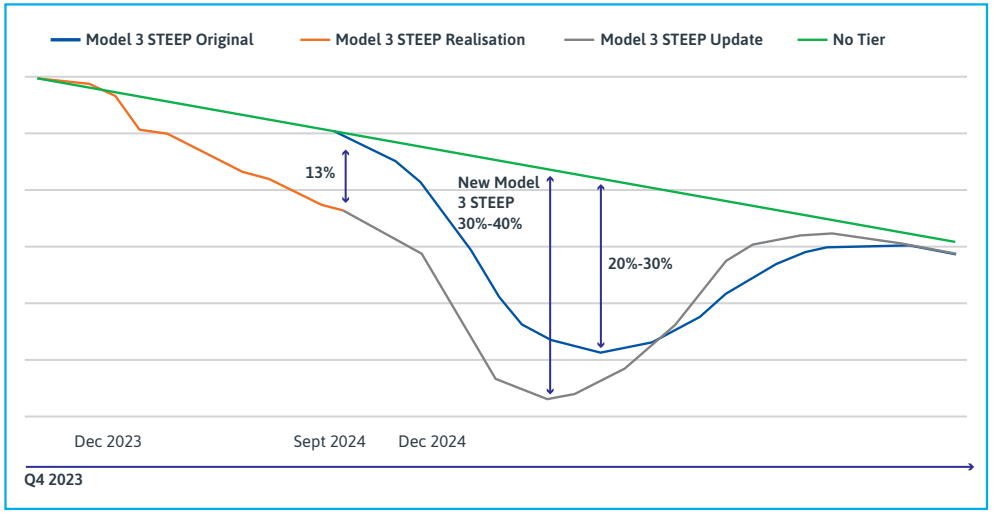
This early depreciation decline is caused by the first Tesla Model 3s returning into the Dutch market, with another 18,000 vehicles in the pipeline, as the "ceiling" of the supply remains the same.

We can see a market reaction to the issue by leasing companies of supply exceeding demand where customers have proactively responded to the market predictions by accelerating the introduction of Tesla Model 3s into the market.

Interest in second cycle and flexible lease contracts is also increasing, driven by the question of when it is best to take or absorb the loss for asset owners.

We are now on the brink of a larger gap between supply and demand, as anticipated. The Tesla Model 3 remains in demand from consumers due to the low price and high perceived brand value of a used Tesla, but price reductions appear to be a crucial incentive to maintaining this.

Tiers for the Tesla Model 3 - STEEP factor



We have seen a quicker than expected price drop (-13%) and against an initial prediction of -20-30% which could lead to -30-40%.

International opportunities

One other option which is being considered is to export the Tesla Model 3s to other European markets where demand and prices for used BEVs is higher. Currently Autorola Netherlands is exporting used BEVs to dealers in Denmark, Germany, Portugal and Poland and we expect more volume to head in this direction over the coming months.

This table shows the big difference between the number of used car sales versus the number of BEV sales and the number of Tesla Model 3 sales. As we can see the numbers are not in line with one another which further showcases the challenges that the rival key markets below are facing.

International Sales opportunities

Sales August 2024	Total sales	Total BEV sales	Total Tesla Model 3 > 4 years
Belgium	33662	1371	19
Germany	401200	20341	99
Denmark	22602	7032	49
Netherlands	116579	6263	263
Portugal	23383	1250	36
Norway	17946	6096	74

Source: INDICATA

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