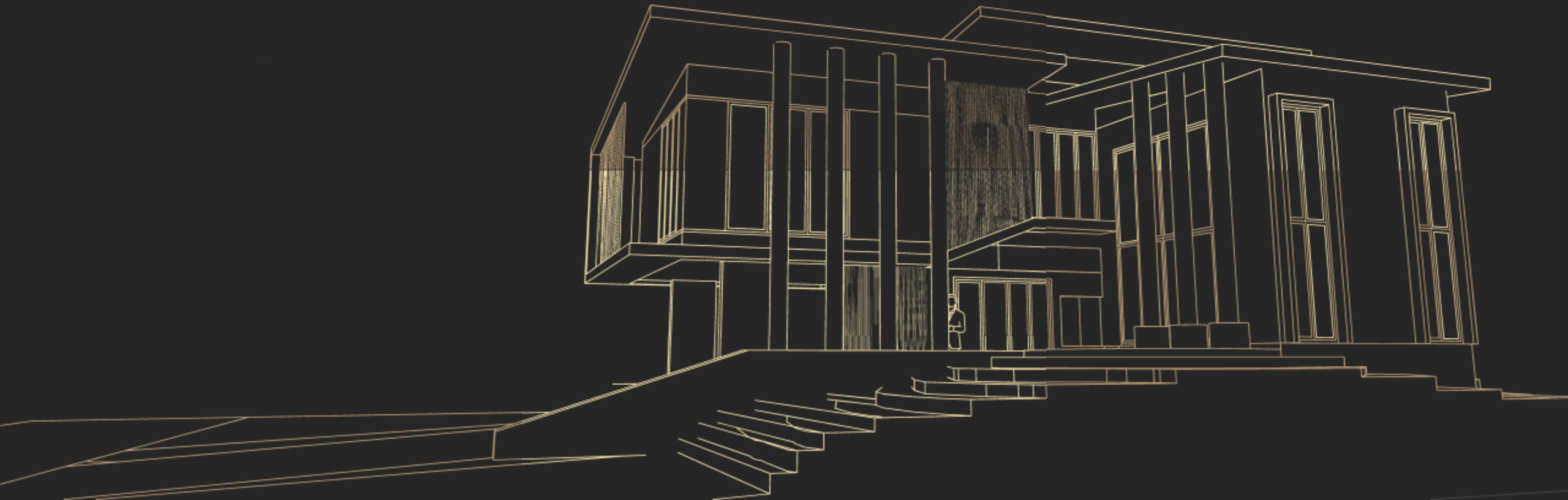


Home Pricing Estimation

Reducing Asymmetric Information in
the **Dutch** Real Estate Market

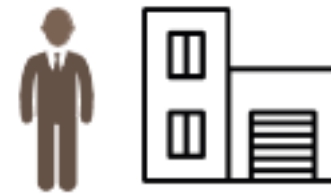


The Selling Process

Depency on Real Estate Brokers

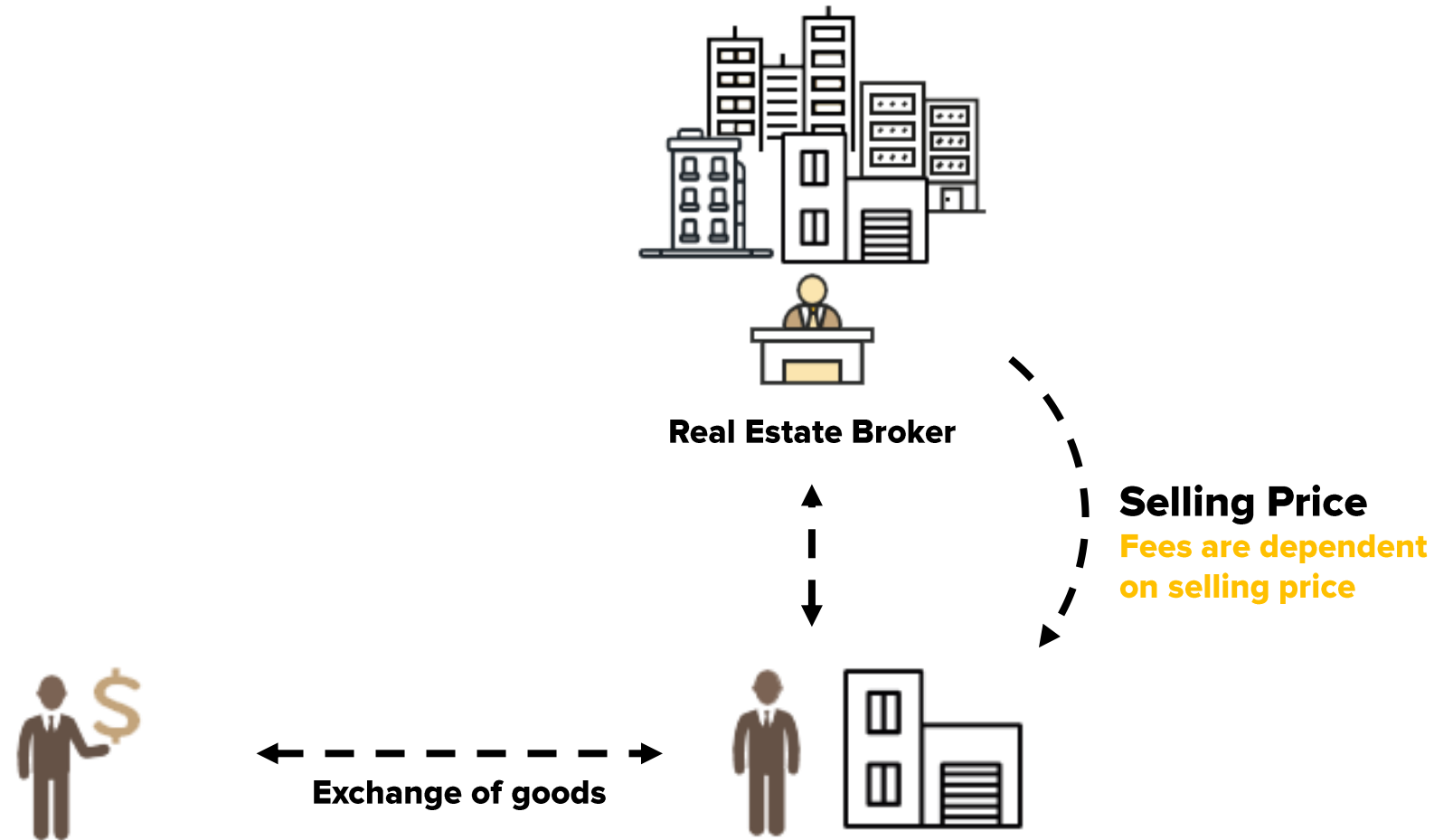


← - - - - - →
Exchange of goods



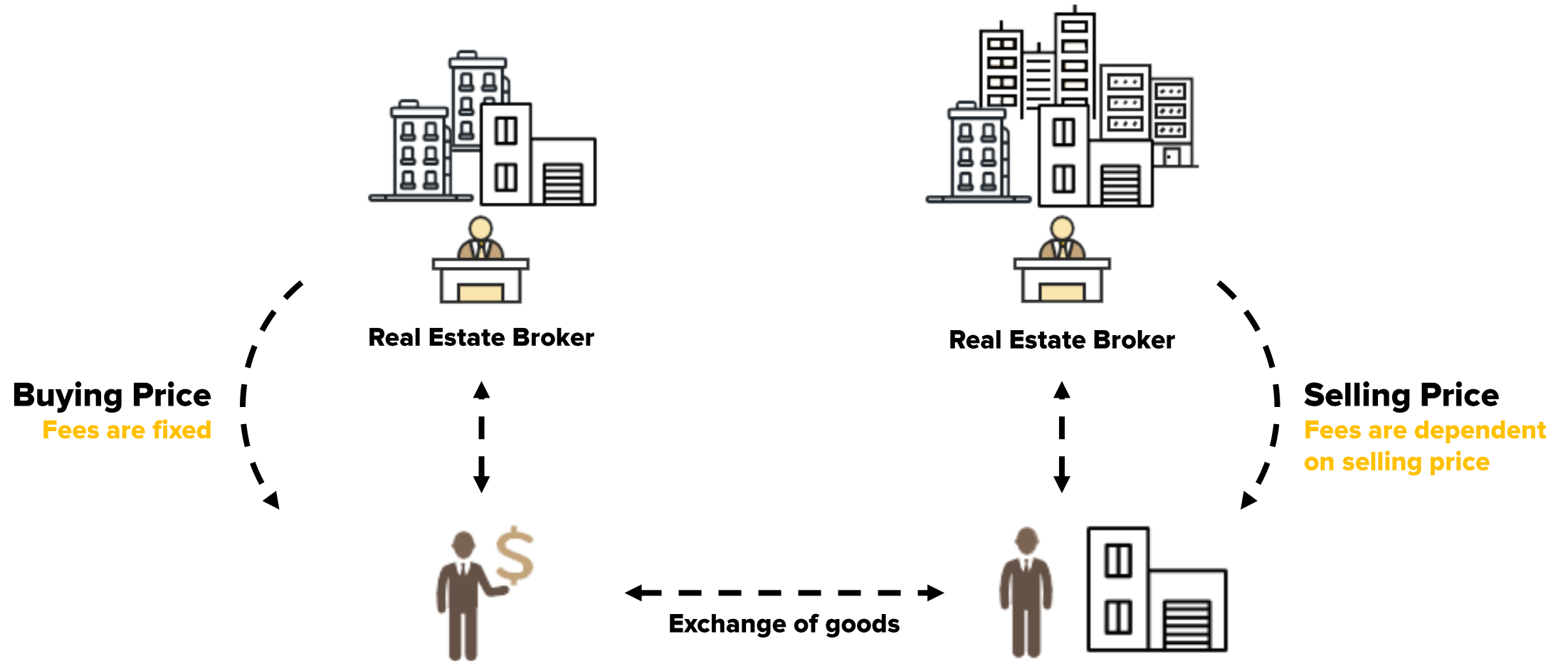
The Selling Process

Depency on Real Estate Brokers



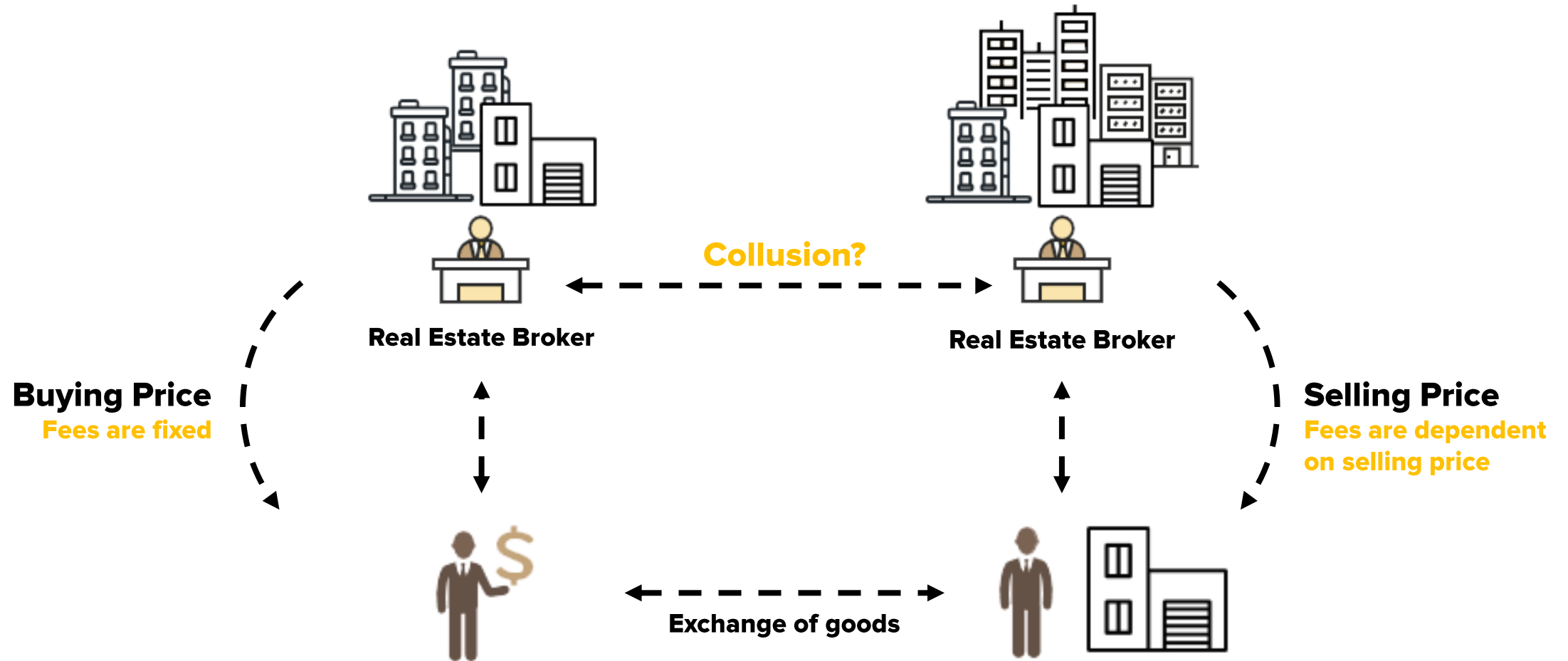
The Selling Process

Depency on Real Estate Brokers



The Selling Process

Dependency on Real Estate Brokers



Improving the **Sellers'** position

Reducing the need for a broker



Real Estate Broker

€€€



**Expertise on
housing pricing**



**Provides assistance
with viewings**



**Connections with
other brokers**



**Arranges sell
contract**

Improving the **Sellers'** position

Reducing the need for a broker

Source of asymmetric information

Real estate professionals have access to **industry databases** with much more complete and recent data ⁽¹⁾



Real Estate Broker

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(1) <http://homeguides.sfgate.com/out-estimated-value-house-6876.html>

Improving the **Sellers'** position

Reducing the need for a broker

Source of asymmetric information

Real estate professionals have access to **industry databases** with much more complete and recent data ⁽¹⁾



Create new dataset for sellers



Real Estate Broker

€€€



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**Arranges sell
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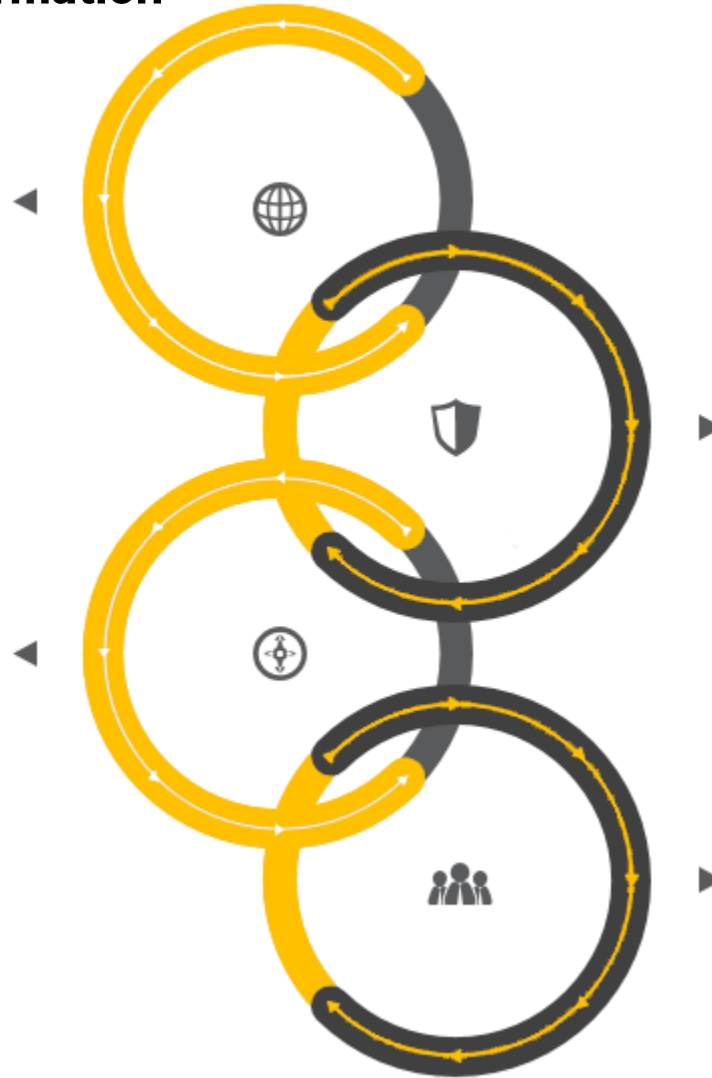


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Scraping Methodology

Giving sellers access to market information

Scraping “Funda”
A Dutch Real Estate website that contains
80% of the houses on the market (1)



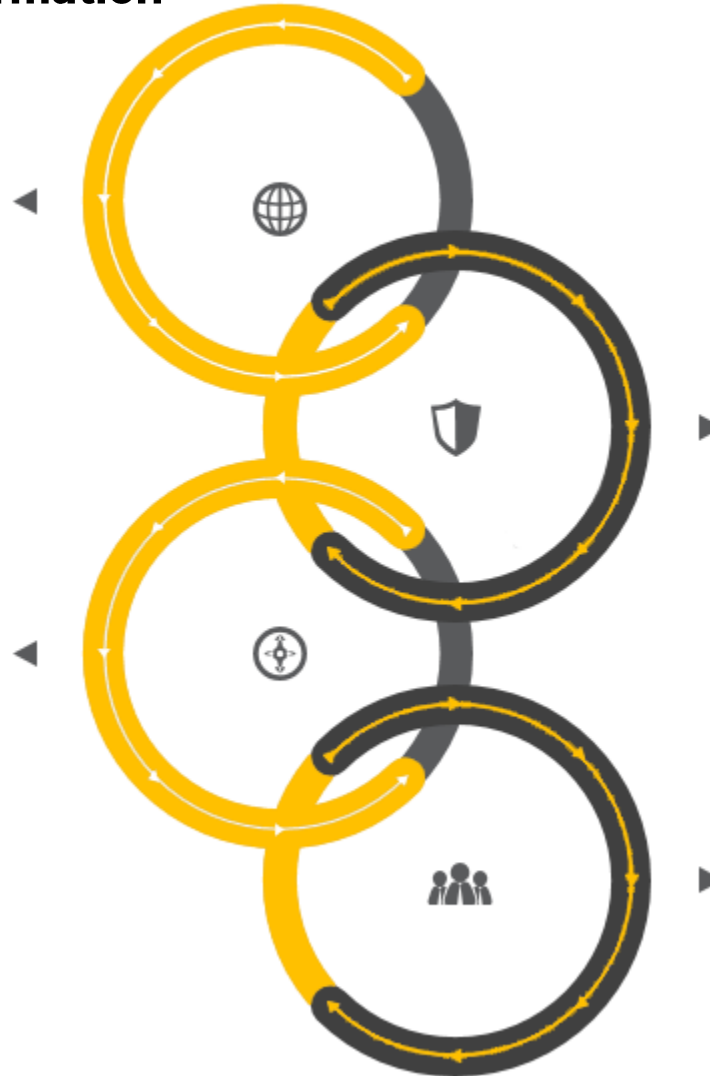
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Scraping Methodology

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Beautifulsoup with I.P. Rotation

- Scraping a webpage in 0.8 sec
- Changing the I.P. address every 200 pages
- Using the TOR network with 7000 proxies
- Retrieved 72000 observations with 35 variables

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Scraping Methodology

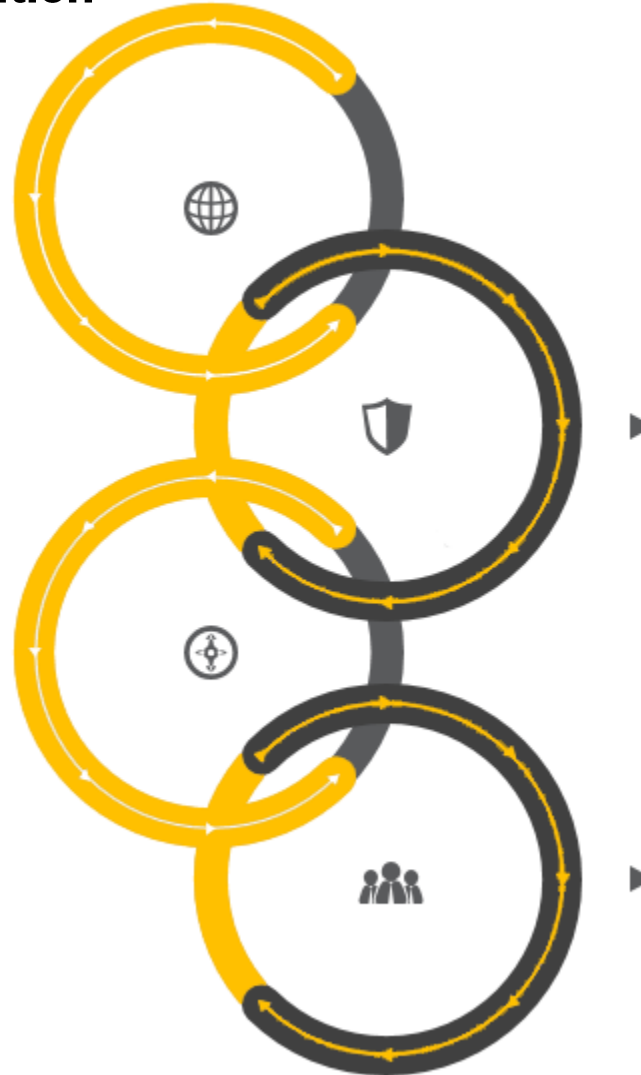
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- 10 Variables
- R^2 of 0.87
- White’s Standard Errors to correct for Heteroskedastic residuals (Gauss Markov Assumptions)



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Shiny Application

- Giving sellers access to the data
- Allowing them to estimate the selling price of their house.



(1) <https://www.emerce.nl/nieuws/concurrenten-funda-winnen-marktaandeel>

Shiny Application

Allowing for **individual** house pricing

House Details:

“Out of sample”

Type of house: Villa

Zipcode: 2905

Surrounding: Quiet road

Living area: 230 m²

Land area: 1007 m²

Garden type: Around the house

Number of floors: 2

Number of bathrooms: 2

Insulated: Yes

Parking options: Parking Garage

Model Estimated Price: € 905,339

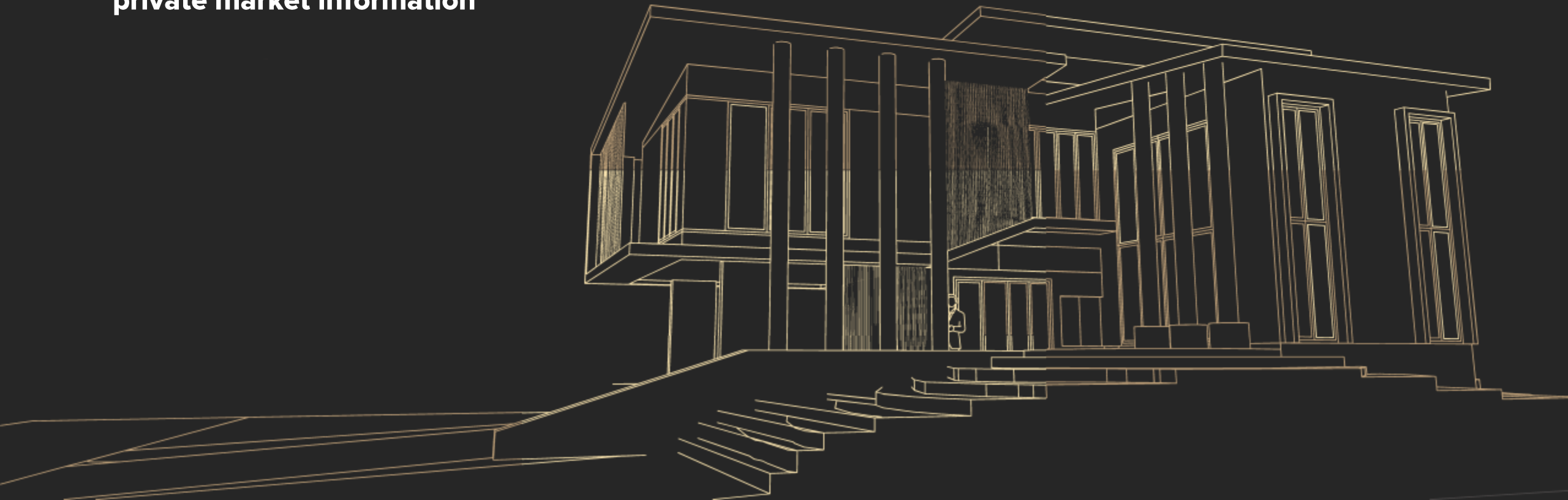
Actual Asking Price: € 895,000



Improving the **Seller's position**

Some conclusions

- Giving sellers access to market information and reduces **asymmetric information**
- Reduces the need for real estate brokers and thereby **reduces the cost** when you sell your house
- Creates an **insentive** for real estate borkers to focus on service, instead of monopolizing their private market information



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Thank you for your attention

Are there any questions?

