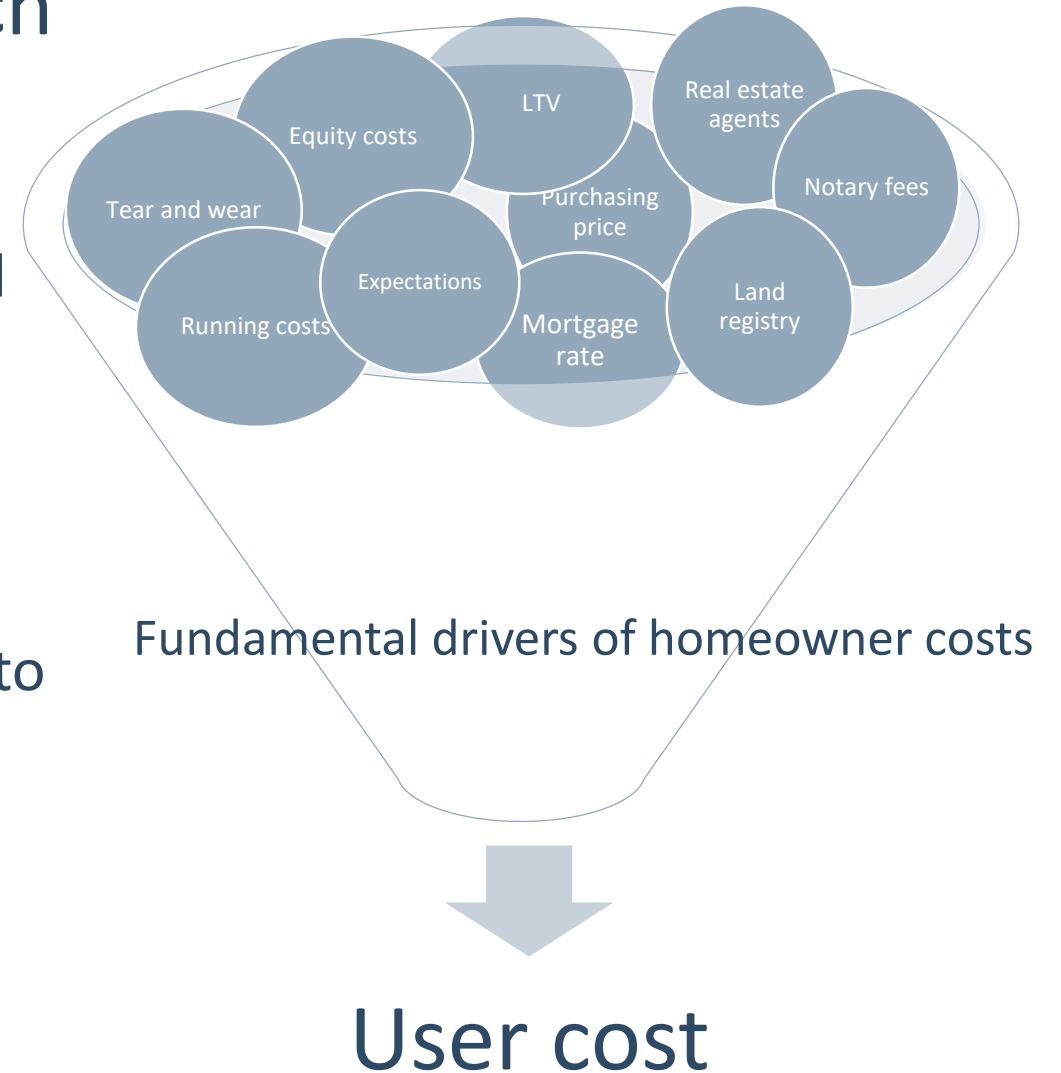


A user cost analysis for the European office market



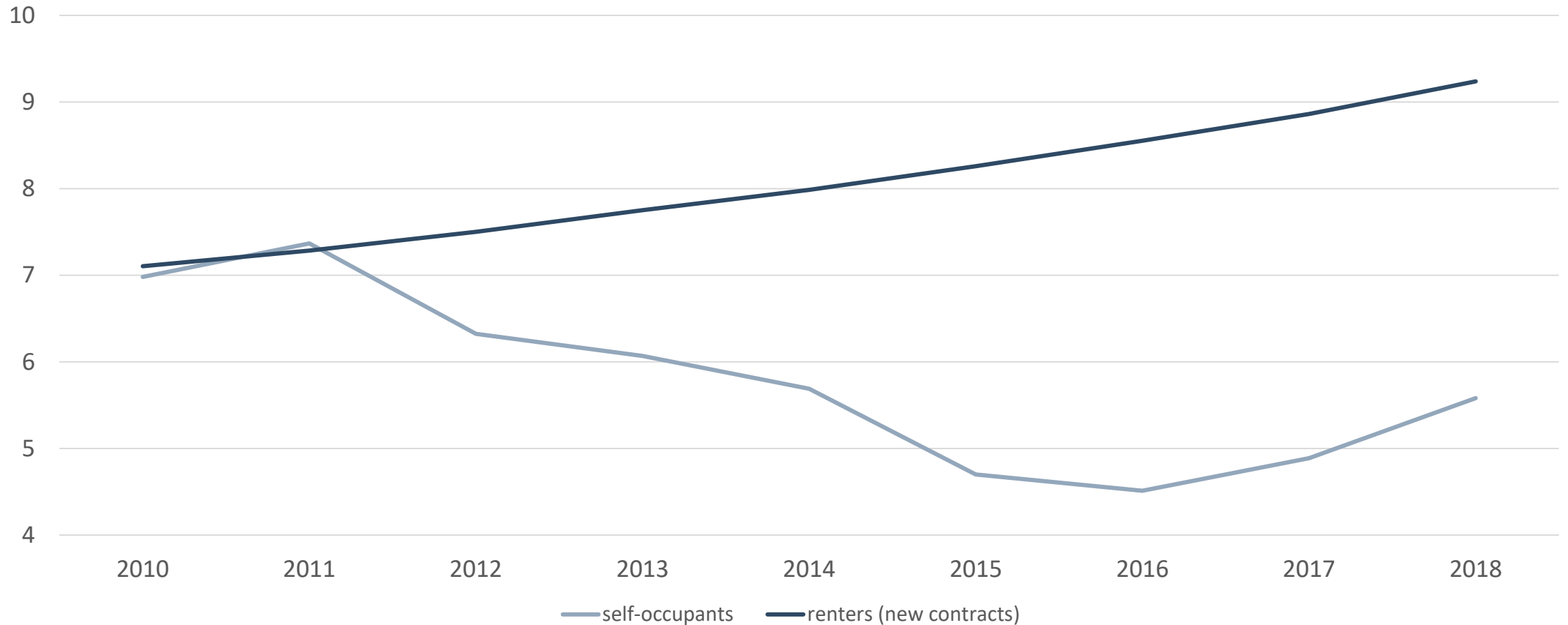
The user cost of housing approach

- A comparison of costs for homeowners and renters
- Main assumption: In the long-run, costs for homeowners and renters will be equal due to arbitrage



Renting is more expensive than buying

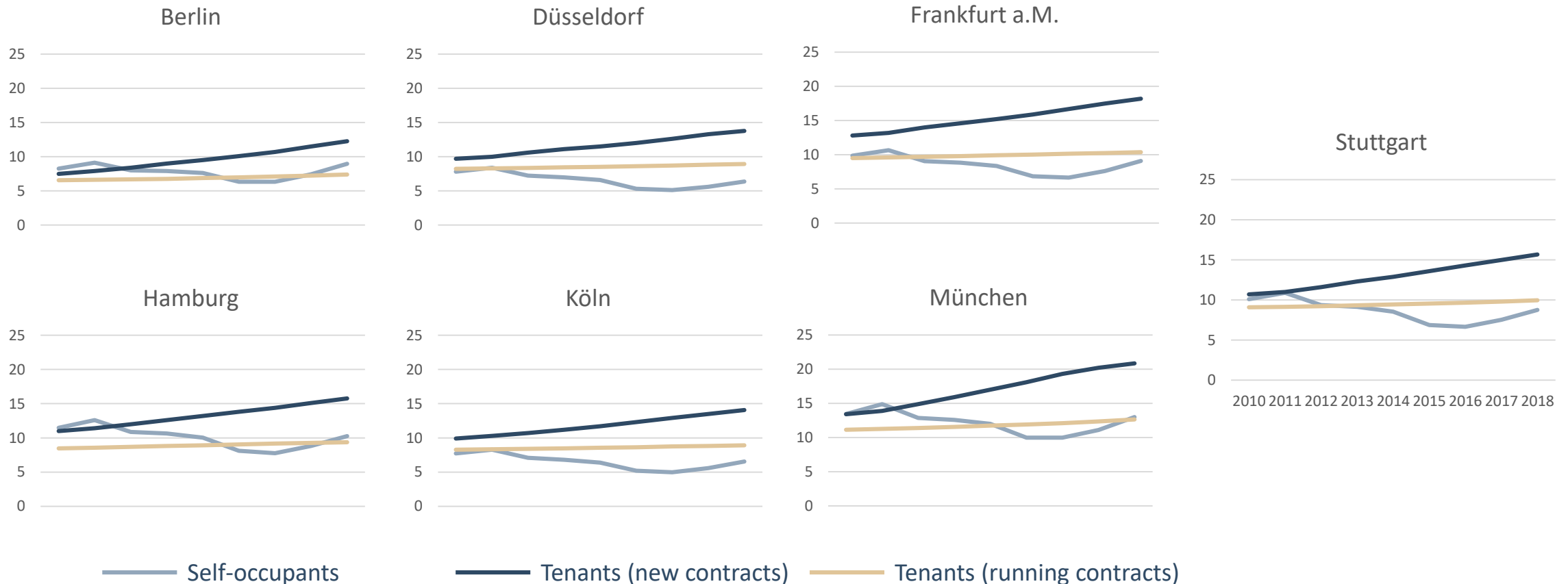
Comparison of user costs for self-occupants and renters (EUR per m²)



vdpResearch; F+B; Institut der deutschen Wirtschaft (2019)

Purchasing is more attractive than renting in big cities

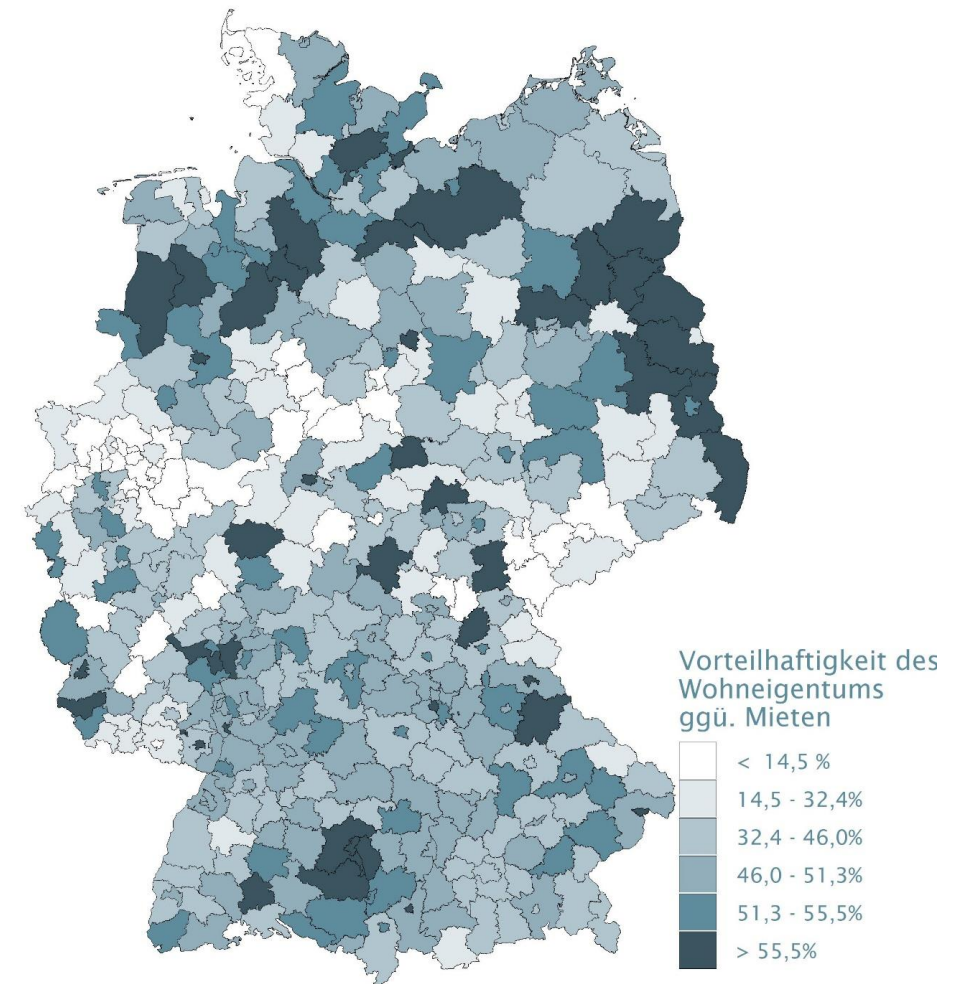
Development of rents and user costs for self-occupants



vdpResearch; F+B; Institut der deutschen Wirtschaft (2019)

Purchasing is more attractive in 94 percent of all municipalities

- Buying is still attractive since mortgage rates overcompensate for price development
- Thus, renting out is also attractive as revenues are higher than costs
- German households are often unable to buy since they have not enough equity
- A speculative bubble is unlikely



vdpResearch; F+B; Institut der deutschen Wirtschaft (2019)

Application of the user cost approach to the office market

Verwendete Daten

The user costs approach does not need much data

Investoren / Unternehmen handeln
Investors and corporates are more rational than households

Fluctuation is higher in the office market

However, the framework is more complex

Variable	Data source
Prime net yields	PMA, 2019, European Office Service, Forecasts
Prime rents R_{it}	PMA, 2019, European Office Service, Forecasts
Purchase prices P_{it} , growth rates g_{it} , effective rents ER_{it}	Calculations based on PMA (2019)
Corporate income tax rates t_t	OECD, 2019a, Tax database, Statutory corporate income tax rates
Capital allowances a_t	Tax Foundation, 2013, OECD capital allowances
Interest rate i_t	OECD, 2019b, Main economic indicators, Long-term interest rates

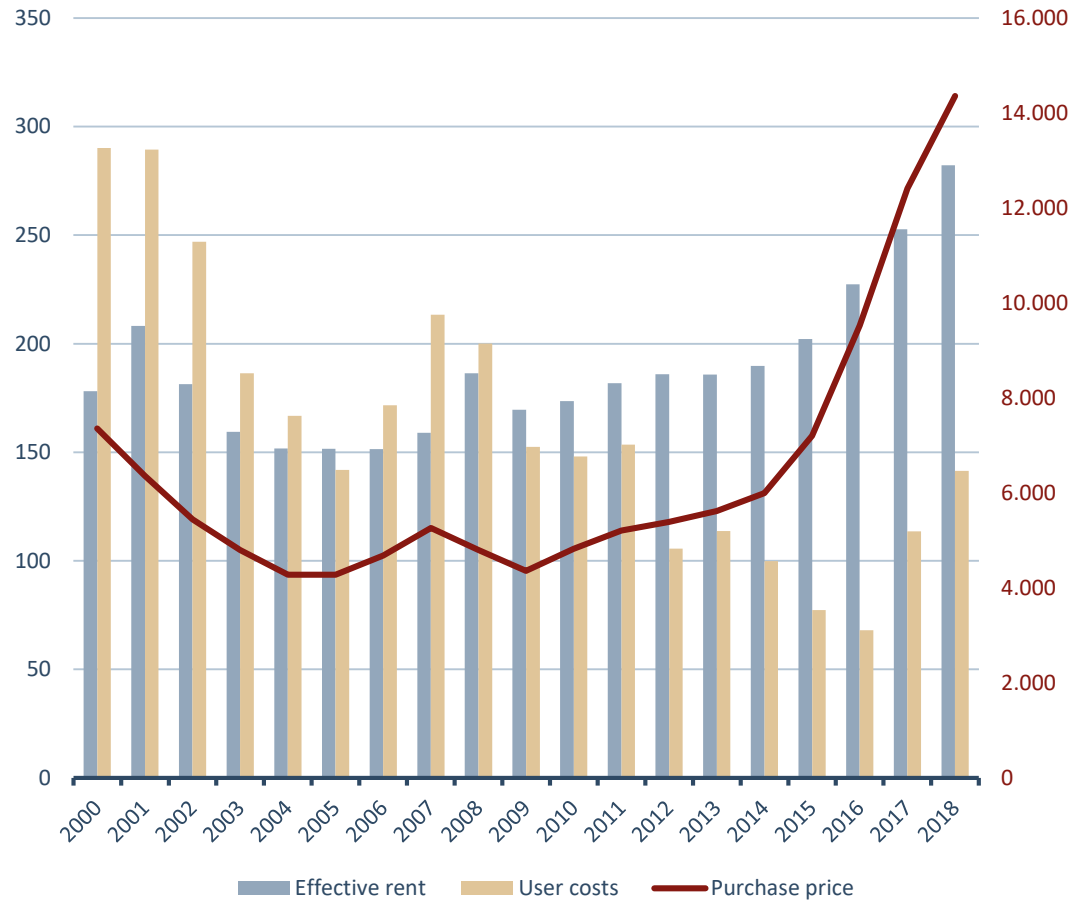
The European office market at a glance

City	Prime rents		Purchase prices	
	2000-2018	2010-2018	2000-2018	2010-2018
Vienna	0.6	0.8	2.6	5,4
Brussels	0.3	0.8	2.4	4.5
Prague	0.1	1.0	4.3	6.2
Copenhagen	0.1	0.7	2.8	4.5
Helsinki	0.2	1.5	3.4	6.9
Paris	0.1	1.2	3.4	7.2
Berlin	0.5	6.3	3.8	14.6
Budapest	-0.1	3.1	2.4	6.6
Dublin	1.0	8.2	1.9	16.6
Rome	0.8	-1.6	2.3	2.3
Luxembourg	2.6	3.8	5.6	9.1
Amsterdam	1.4	3.3	4.9	10.6
Oslo	2.2	2.8	6.7	8.9
Warsaw	-0.1	-0.9	4.4	3.0
Lisbon	-1.4	-0.4	0.9	5.3
Madrid	-0.6	3.1	1.5	9.3
Stockholm	1.5	6.4	4.3	11.7
London	0.6	1.7	2.7	4.6

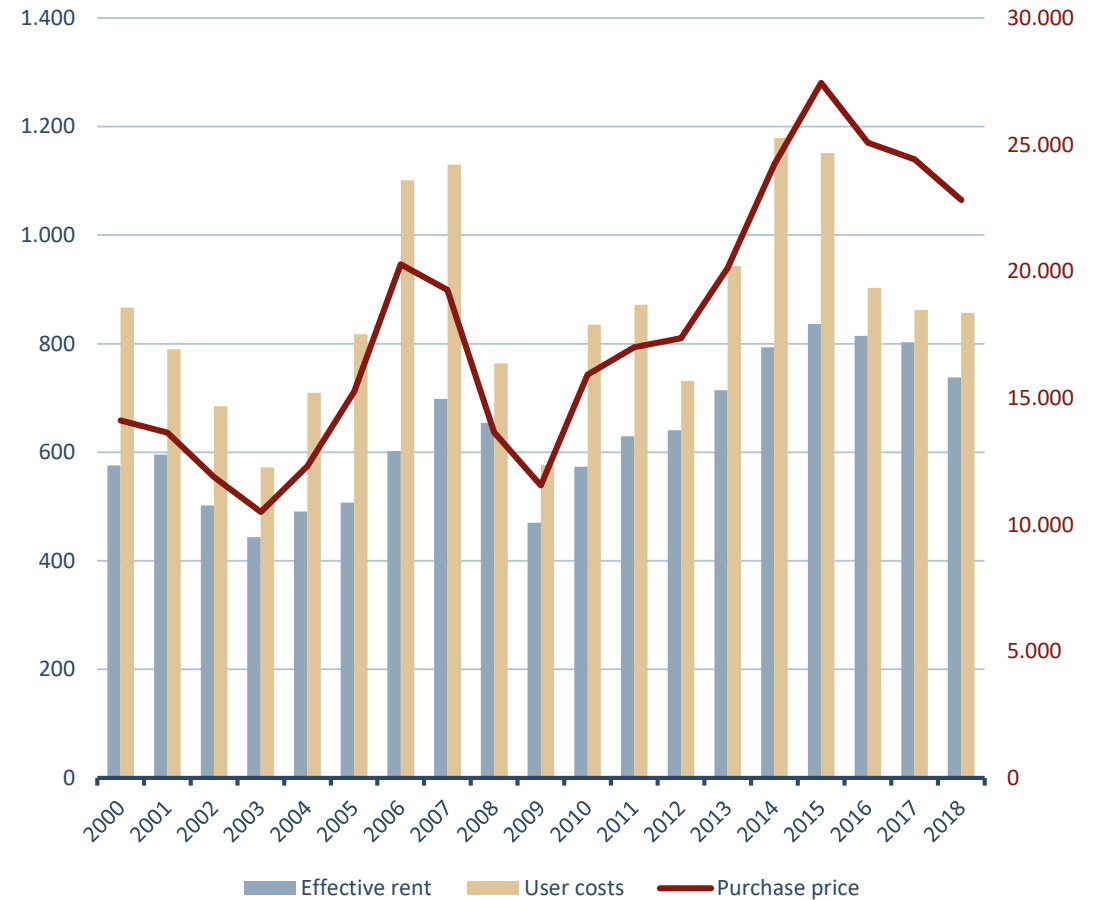
Source: calculations based on PMA, 2019

Results for Berlin und London

Berlin

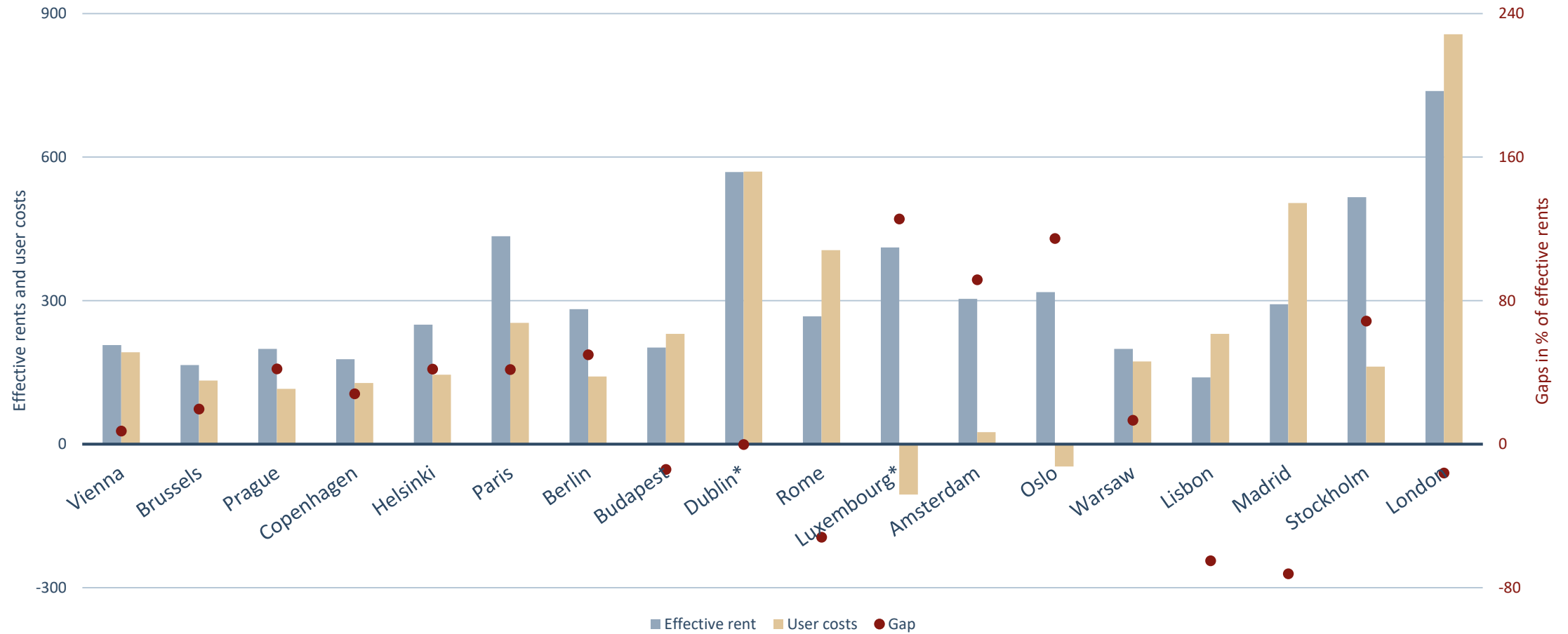


London



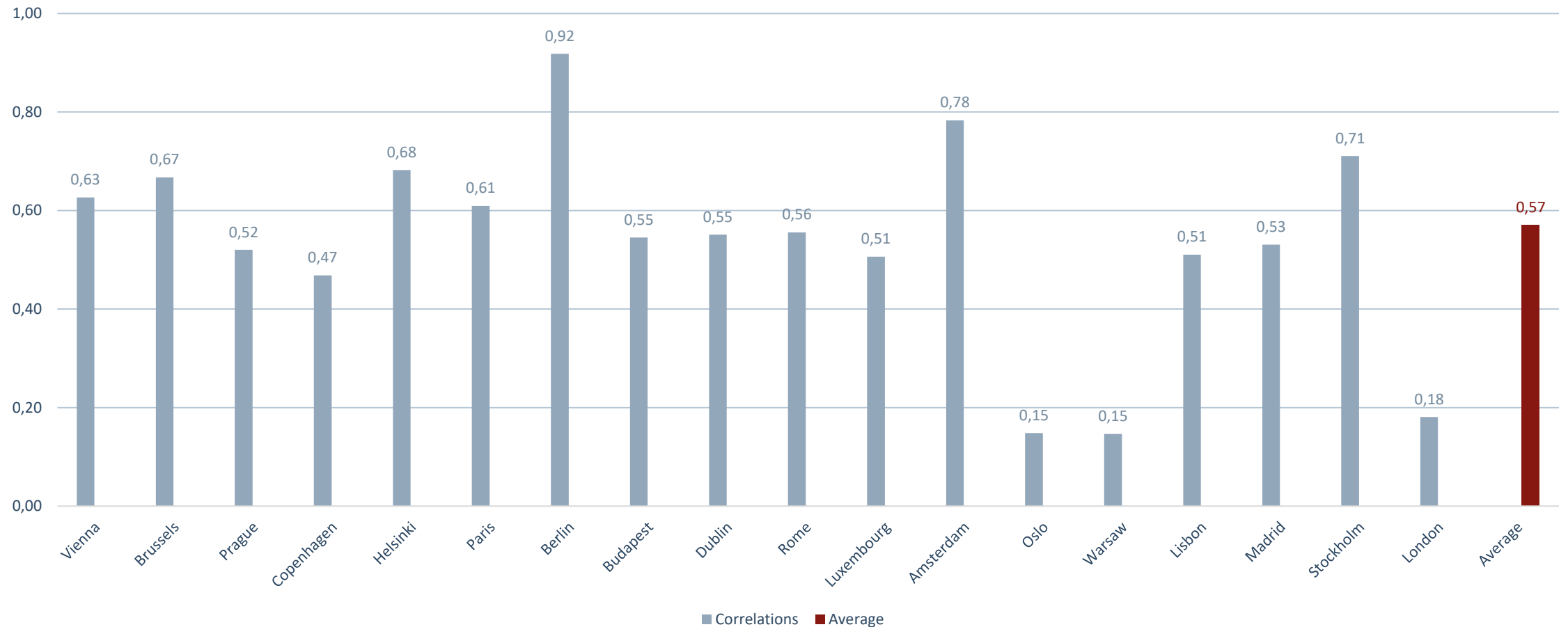
Source: calculations based on PMA (2019), OECD (2019a, 2019b) and Tax Foundation (2013) data

Results for 18 capitals



Source: calculations based on PMA (2019), OECD (2019a, 2019b) and Tax Foundation (2013) data

Correlation coefficient between the gap and prices



Source: calculations based on PMA (2019), OECD (2019a, 2019b) and Tax Foundation (2013) data

Conclusion

The user cost approach gives hints on possible over-valuations – however, a more detailed analysis is necessary.

The results are promising, further research is planned

Especially the predictive power of the model shall be tested more thoroughly

