The Cape of Good Homes:
Exchange Rate Depreciations, Foreign Demand & House Prices

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[3]The views expressed do not necessarily reflect the position of the Deutsche Bundesbank

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Real estate as a global asset

↯ increases *the exposure of local housing markets to global ﬁnancial conditions or to shocks aﬀecting foreign investors active in local markets."* - IMF (2018)

> Local house price effects - Badarinza & Ramadorai (2018)

Anecdotal evidence of sizeable exchange rate effects on foreign demand (Turkey)

> House prices slow to change *↯* Changes house prices in foreign currency but not local prices themselves

For a Lucky Few, Luxury Is Suddenly a Lot Cheaper in Turkey

By Constantine Courcoulas
August 12, 2018, 6:04 PM GMT+2 *Updated on August 13, 2018, 8:51 AM GMT+2*

▶ Wait times of 30 minutes to get into Chanel before prices rise
▶ "Turkey is now the cheapest place in the world for shopping"

(a) Bloomberg - 12 August 2018

(a) Bloomberg - 12 August 2018

(b) Guardian - 18 August 2018

This paper

Unique setting and granular transaction data

- Cape Town (CPT) attractive to foreign investors

- South African Rand is one of the worlds most volatile currencies

- Transaction data with information on residence status

This paper

Unique setting and granular transaction data

Cape Town (CPT) attractive to foreign investors

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Transaction data with information on residence status

We ask three questions

1. What are the characteristics of foreign real estate demand in CPT?

2. How do foreign buyers respond to a positive exchange rate demand shock?

3. What is the effect of this foreign demand on prices?

Foreigners buy better properties in better areas

Foreign buyers do not pay higher quality-adjusted prices; sellers realize lower capital gains

Non-resident foreign transactions have a negative relationship with the exchange rate

No effect for resident foreigners / effects linked to residency and not nationality

Increased foreign demand following large exchange rate depreciations does not increase prices paid by locals

Related literature

Out-of-town / Out-of-country buyers in the housing market

Investment outcomes - Chinco & Mayer (2016); Cvijanovic & Spaenjers (2018)

Home / Nationality bias - Badarinza & Ramadorai (2018); Sa (2017); Cvijanovic & Spaenjers (2018); Badarinza et al. (2018); Agarwal et al. (2018)

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Foreign demand for housing and global macroeconomic conditions

Economic and political risk - Badarinza & Ramadorai (2018); Sa (2017)

Wealth effects - Cvijanovic & Spaenjers (2018)

Exchange rates - Cvijanovic & Spaenjers (2018); Ruf & Levi (2011)

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Foreign demand for housing, house prices and welfare

Decreases in welfare driven by reduction in rental stock - Favilukis & van Nieuwerburgh (2018)

Cape Town as an attractive destination for foreign investment

Cape Town's (CPT) "property swallows" - The Financial Times (2016)

South African Rand is one of the most volatile currencies in the world

 20th most traded currency; 1% of all global foreign currency trading - BIS (2016)

 / volatility linked to large financial flows and not necessarily to significant institutional changes in the country

No buying/selling restrictions on foreigners

Data

Property transactions in CPT between 2011-2016

The dataset allows us to identify the residence status of buyers
- South African Residents
- Foreign Residents
- Foreign Non-Residents

We append a rich dataset on property characteristics

We observe
- Who buys the property
- The nationality status of the buyer
- The characteristics and location of the property

Summary statistics

	Mean price	N	% N	% Rand value
Foreign non-res.	R1.80M	3,700	3.41	5.17
Foreign res.	R1.54M	3,072	2.83	3.70
SA res.	R1.15M	101,661	93.80	91.11

Buyer Type	Plot size (m^2)	Floor size (m^2)	Bed-rooms	Bath-rooms	% Sectional title	Distance from coast (km)
Foreign non-res.	378	141	2.67	2.06	38.80%	8.02
Foreign res.	371	130	2.65	1.99	33.60%	9.79
SA res.	390	119	2.76	1.86	20.20%	15.00

Summary statistics
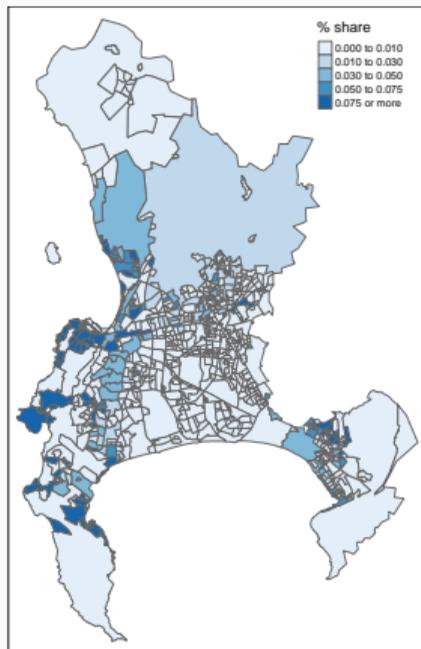
(a) Foreign non-residents
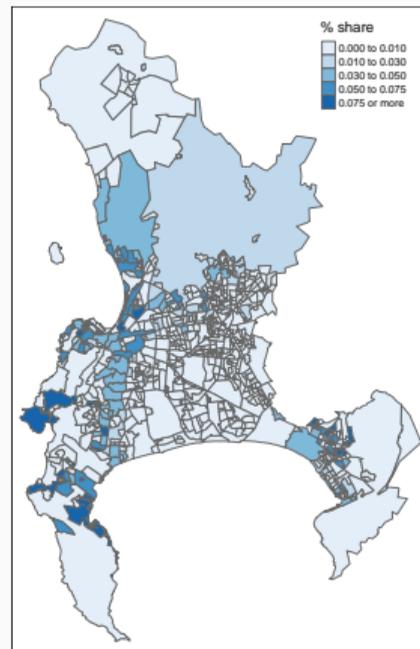
(b) Foreign residents

Figure 2: Cape Town spatial foreign transaction share of total transactions: 2011-2016

Information asymmetries - Chinco & Mayer (2016)

Higher private valuations - Cvijanovic & Spaenjers (2018)

Foreign premiums in the housing market

Information asymmetries - Chinco & Mayer (2016)

Higher private valuations - Cvijanovic & Spaenjers (2018)

$$\ln P_{i,t} = \ + X_i^{2015} + \ _1 B_i + \ _t + \ _s + "_{i,t},$$

B_i - conditional on controls, what is the price foreign buyers pay relative to local buyers?

Foreigners buy better properties, in better areas, and pay higher prices

	(1)	(2)	(3)	(4)
Foreign non-resident buyer	33.54***	18.45***	6.46***	5.91***
	(0.010)	(0.009)	(0.006)	(0.006)
Foreign resident buyer	26.75***	11.79***	3.24***	2.86***
	(0.010)	(0.008)	(0.006)	(0.006)
Time fixed effects	Yes	Yes	Yes	Yes
Main-place fixed effect	No	Yes	No	No
Sub-place fixed effect	No	No	Yes	Yes
Qualitative controls	No	No	No	Yes
Observations	108,397	108,397	108,397	108,397
Adj. R-squared	0.431	0.637	0.813	0.821

Coefficients multiplied by 100

Foreign buyer investment outcomes

Repeat sales specification

Controls of unobserved property characteristics

Smaller sample / no new transactions

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$$(\ln R_{i;t;u}) = \ + \ _1 B_{i;t} + \ _2 S_{i;u} + \ _3 Ren_i + \ _t + \ _u + \ _s + "_{i;t;u};$$

$B_{i;t}$ - what is the price foreign buyers relative to the previous transaction price?

$S_{i;u}$ - what is the return foreign sellers make upon resale?

Foreign buyer make lower capital gains upon resale

	(1)	(2)	(3)
Foreign resident buyer	0.60	0.42	0.50
	(0.009)	(0.009)	(0.008)
Foreign non-resident buyer	-0.00	1.29	0.73
	(0.008)	(0.008)	(0.008)
Foreign resident seller	-3.40***	-2.79***	-2.88***
	(0.008)	(0.008)	(0.008)
Foreign non-resident seller	-10.75***	-9.86***	-10.20***
	(0.008)	(0.008)	(0.008)
Year of purchase fixed effect	Yes	Yes	Yes
Year of sale fixed effect	Yes	Yes	Yes
Main-place fixed effect	No	Yes	No
Sub-place fixed effect	No	No	Yes
Observations	61,991	61,991	61,991
Adj. R-squared	0.661	0.674	0.703

Coefficients multiplied by 100

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Exchange rates and foreign demand

Intuition: exchange rates discount the price of property for buyers using foreign currency

Turkey / 142% increase in foreign transactions following recent large ER depreciation of 30% year on year

Exchange rates and foreign demand

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Turkey / 142% increase in foreign transactions following recent large ER depreciation of 30% year on year

What is the relationship in an emerging market city with one of the most volatile currencies in the world?

$$\ln \Delta N_t^B = \quad + \, _1\Delta ER_{t\ 1} + \Pi_t + "_t;$$

Exchange rates and foreign demand

	Foreign Non-Residents		Foreign Residents		South African Residents	
	(1)	(2)	(3)	(4)	(5)	(6)
ER_{t-1}	-82.25***		-13.59		2.89	
	(0.174)		(0.155)		(0.025)	
ER_{t-1}^{Q3}		5.98*		2.82		-0.49
		(0.032)		(0.028)		(0.005)
ER_{t-1}^{Q2}		9.36***		1.32		-0.29
		(0.032)		(0.028)		(0.005)
ER_{t-1}^{Q1}		13.14***		1.68		-0.41
		(0.032)		(0.028)		(0.005)
Observations	57	57	57	57	57	57
Adj. R-squared	0.284	0.262	0.014	0.020	0.023	0.038

Coefficients multiplied by 100

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Foreign demand and house prices

Increased foreign demand ⁄ increased prices: evidence for London (Badarinza & Ramadorai, 2018) but less clear for Paris (Cvijanovic & Spaenjers, 2018)

Effect determined by extent of out-migration, usage of the property & supply response - Favilukis & van Nieuwerburgh (2018)

Foreign demand and house prices

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Endogeneity concerns ⁄ increase prices *or* buy in areas experiencing price increases?

Literature: shares of pre-existing foreign residents per suburb as instrument

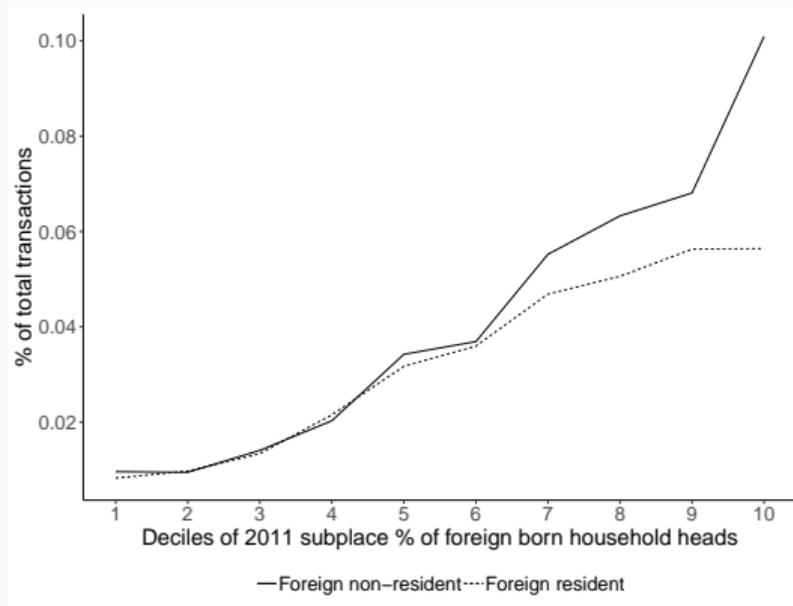Tendency is stronger for non-resident foreigners

Figure 3: Foreign transaction deciles and the 2011 share of foreign born household heads

Empirical strategy

This paper / Difference-in-differences empirical strategy

Identify suburbs with high shares of foreign born households heads from census

Calculate quality-adjusted suburb prices

Calculate quality-adjusted suburb price spreads between these suburbs and other suburbs who are geographically close

Study changes in the quality-adjusted suburb price spread following large lower quartile exchange rate depreciations

Empirical strategy

We use the local suburb hierarchy to identify control and treatment suburbs

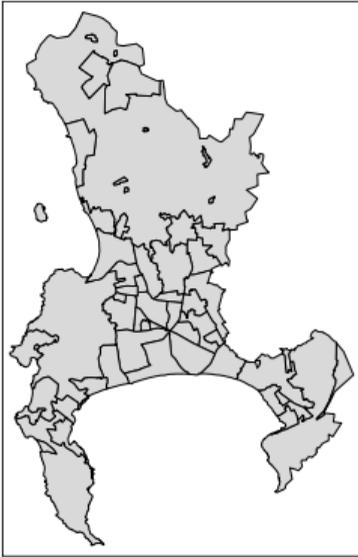Census suburb boundaries drawn to best create homogeneous households within suburbs

Within each *mainplace*

We rank subplaces based on the share of foreign household heads as of 2011 using census data

Treatment: subplaces in the upper 25% of the distribution

Control: subplaces in the bottom 25% of the distribution

(a) Mainplace

Cape Town suburb hierarchy
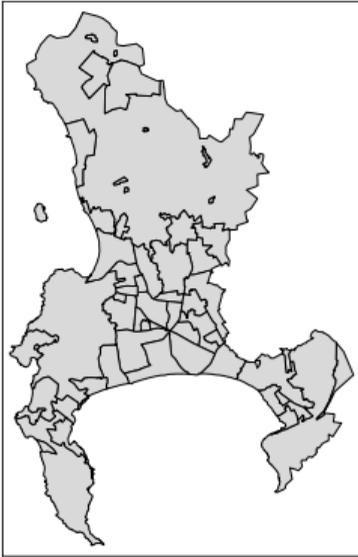

(a) Mainplace   **(b)** Subplace

(a) Mainplace   **(b)** Subplace   **(c)** Durbanville subplace

Empirical strategy

We create a quality-adjusted price index for each control and treatment group of suburbs, within each mainplace

$$\ln P_{i,t} = \quad + X_i^{2015} + \quad _1 B_i + \quad _m^k + \quad _{m,t}^k + \text{"}_{i,t,}$$

$_m^k$ / Mainplace group fixed effect

$_{m,t}^k$ / Mainplace group by time fixed effect

$_{m,t}^k$ represents mainplace group by time variation in house prices controlling for property observables and buyer fixed effects

Empirical strategy

Calculate the price spread between within mainplace treatment and control prices

$$_{m,t} = \quad ^{treat}_{m,t} \quad ^{control}_{m,t},$$

Study the effect of changes in the price spread, following large depreciations

$$\Delta \ _{m,t} = \Delta \ _{m,t\ 1} + \ _1 \Delta ER^{Q1}_{t\ 1} + \ _m + "_{m,t},$$

$\Delta ER^{Q1}_{t\ 1}$ / previous month represents a real effective exchange rate movement in the lower quartile of the exchange rate distribution

/ depreciation larger than a 14.5% year on year change

No price increases for local buyers

	Full sample		South African sub-sample	
	(1)	(2)	(3)	(4)
$\Delta ER_t^{Q1}{}_1$	2.26**	3.25**	1.20	1.25
	(0.009)	(0.010)	(0.013)	(0.018)
Main-place fixed effect	Yes	Yes	Yes	Yes
Year fixed effect	No	Yes	No	Yes
Observations	1,367	1,367	1,296	1,296
Adj. R-squared	0.225	0.223	0.210	0.201

Coefficients multiplied by 100

Heterogeneous effects & robustness

We split our sample based on income and education

Significant effects in lower income and lower education mainplaces

Robustness: randomly assign exchange rate events

2000 draws: effect we measure has a p-value of 0.49

⚡ suggests price spread increases linked to exchange rate events

Conclusion

Foreign buyers do not pay higher quality-adjusted prices; sellers realize lower capital gains

Global economic conditions transmit to local housing markets

Link between large exchange rate depreciations and housing market via foreign demand

Effects can be pronounced in open EME with volatile exchange rates

Discount linked to speed of closing transaction

Thank You