Who Owns Offshore Real Estate? Evidence from Dubai

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Abstract

This paper analyzes a unique micro-dataset capturing the ownership of about 800,000 properties in Dubai. We use this dataset to document patterns in cross-border real estate investments, a blind spot in the analysis of financial globalization. We obtain four main findings. First, offshore real estate in Dubai is large: at least $146 billion in foreign wealth is invested in the Dubai property market. This is twice as much as real estate held in London by foreigners through shell companies. Second, geographical proximity and historic ties are key determinants of foreign investments in Dubai. About 20% of offshore Dubai real estate is owned by investors from India and 10% by investors from the United Kingdom; other large investing countries include Pakistan, Gulf countries, Iran, Canada, Russia, and the United States. These patterns hold when focusing on the most affluent neighborhoods, with the main difference that Indian investments become relatively smaller and Russian investments larger. Third, a number of conflict-ridden countries and autocracies have large holdings in Dubai relative to the size of their economy, equivalent to 5%–10% of their GDP. This suggests that the official net foreign asset position of a number of low-income economies is significantly under-estimated. Last, by matching properties owned by Norwegians to administrative tax records in Norway, we find that the probability to own offshore real estate rises with wealth, including within the very top of the wealth distribution. About 70% of Dubai properties owned by Norwegian taxpayers were not reported for tax purposes in 2019. These results suggest that the lack of cross-border exchange of information on real estate ownership is a significant issue for tax enforcement.

1   Introduction

A major blind spot of existing economic statistics is the lack of data on cross-border real estate. While progress has been made in the estimation and analysis of offshore financial wealth,[1] little is known about real assets owned by households outside of their country of residency. How large is offshore real estate? Which households are more likely to own properties abroad? Does this form of wealth typically evade taxation? These questions are increasingly relevant for policymaking, because real assets are not covered by the multilateral automatic exchange of information between tax authorities that entered into force in 2017. This coverage gap creates incentives for tax evaders to rebalance portfolios away from financial assets toward real estate. There are also long-standing concerns that offshore real estate may sometimes be used to launder money and to evade international sanctions.

In this paper, we attempt to shed light on this aspect of financial globalization by analyzing property ownership in one of the world's largest offshore financial centers, Dubai. We do so by exploiting micro-data capturing the ownership of about 800,000 properties in this territory, one of the seven emirates forming the United Arab Emirates. These data were provided by confidential sources to the Center for Advanced Defense Studies (C4ADS), a US nonprofit organization dedicated to analysis and reporting of conflict and security issues worldwide.[2] The dataset contains property-level characteristics, including in most cases the owner's nationality as of 2020. To our knowledge, this is the first time that such comprehensive and granular data on the ownership of cross-border real estate is analyzed in any country. Our main contribution is to use this data to estimate the value of real estate owned in Dubai by country and to analyze country-level patterns. We do not study individual cases: all the statistics presented in this paper aggregate many observations. Our analysis delivers four main findings.

First, Dubai offshore real estate is large. We estimate the total market value of properties in Dubai at USD 533 billion in 2020, of which about 27 percent is foreign-owned. Because we cannot identify the nationality of about 7 percent of the owners, foreign ownership is likely to be even higher. By our estimate, offshore real estate in Dubai adds up to at least USD 146 billion. To put this number in perspective, pioneering work by Bomare (2019) suggests that

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[1]See, e.g., Zucman (2015), Alstadsæter, Johannesen, and Zucman (2019), Roussille (2020), Johannesen, Langetieg, Reck, Risch, and Slemrod (2020), Collin (2021), Leenders, Lejour, Rabaté, and van 't Riet (2021), Londoño-Vélez and Àvila-Mahecha (2021), Londoño-Vélez and Ávila-Mahecha (2022).

[2]After having corroborated the accuracy of an earlier version of these data, C4ADS published case studies of the use of Dubai real estate by a number of sanctioned individuals (C4ADS 2018). The organization also shared data with a number of journalists, see for instance OCCRP (2018) and Dagbladet (2019). C4ADS granted us access to an updated version of the database, covering the year 2020.

offshore real estate held in London through shell companies amounted to about USD 66 billion in March 2019. Foreign-owned real estate in Dubai thus appears to be about twice as large as in London, despite the fact that Dubai (with a population of 3.5 million) is only a third the size of London (population of 9.0 million).

Second, geographical proximity and historic ties are important determinants of foreign investments in Dubai. The bulk of foreign-owned properties in Dubai belong to owners from the Middle East, South Asia, Europe, and Central Asia. The largest foreign owners (both by the aggregate value of properties owned and by the number of owners) are Indian nationals: about 35,000 Indians own Dubai properties, worth almost USD 30 billion (20 percent of total offshore Dubai real estate). The United Kingdom comes next (23,000 unique owners, with properties worth USD 15 billion, 10 percent of the total). The remaining top countries by aggregate values include countries in the wider Middle Eastern and Central Asia region (e.g., Pakistan, Saudi Arabia, Iran, Jordan, and Russia) and large economies (e.g., Canada, United States, and China). About 8 percent of offshore Dubai real estate belongs to owners from the European Union. These patterns remain when we focus on the most affluent neighborhoods, where the share of real estate owned by foreigners is particularly large, around half. The main difference is that while India remains the largest owner, its share of foreign-owned real estate falls, while the share of Russia is multiplied by two, to reach 6 percent in the most expensive districts.

To better quantify these patterns, we estimate gravity-like models of foreign investment in Dubai properties. As in the literature on cross-border financial investments (e.g., Portes and Rey (2005) and Lane and Milesi-Ferretti (2008)), we find a statistically significant and economically large effect of distance and of the size of investing countries on the ownership of Dubai real estate. There is also a significant positive correlation between real estate held in Dubai and financial assets held in Switzerland, the largest offshore financial wealth center, even after controlling for gravity-type variables. The most notable exceptions are Iran, Iraq, and India, which hold large amounts of Dubai real estate but comparatively little in Swiss banks. Investments in Dubai properties thus share commonalities with other offshore investments, although Dubai appears to be particularly attractive to neighboring countries.

Our third finding is that a number of conflict-ridden countries (e.g., Afghanistan, Syria, Yemen) and countries under autocratic rule (e.g., Eritrea, Azerbaijan, and Kyrgyzstan) have large holdings in Dubai real estate relative to the size of their economy, equivalent to 5%–10% of their GDP. For example, Syrian nationals own the equivalent of 7.4% of Syria's GDP in Dubai properties. Our data also reveal significant ownership by tax havens. Saint Kitts and

Nevis, a major provider of citizenship by investment, has by far the largest ratio of real estate in Dubai to GDP. Tax havens like the British Virgin Islands, the Cayman Islands, the Bahamas, and the Seychelles also own significant amounts, reflecting ownership through shell companies. Allocating these properties to their ultimate beneficial owners would increase the size of Dubai properties owned by non-haven countries.

Fourth, the probability to own offshore real estate rises with wealth, including within the very top of the wealth distribution. To establish this result, we analyze the anonymized records of Norwegian owners of Dubai properties matched to tax records in Norway. Because Norway has a wealth tax, the authorities in this country collect individual-level information on wealth, allowing us to rank owners of Dubai properties in the wealth distribution. The probability to own Dubai real estate rises with wealth all the way up to the top 0.01% of the wealth distribution, similar to the pattern found by Alstadsæter, Johannesen, and Zucman (2019) and Guyton, Langetieg, Reck, Risch, and Zucman (2021) for the ownership of offshore financial assets. Moreover, about 70% of the properties owned in Dubai by Norwegian residents were unreported to the tax authority and thus potentially evaded taxation.

Our results have implications for the analysis of financial globalization and for international tax cooperation policies. Because offshore real estate typically goes unrecorded in official international investment statistics, the net foreign asset position of low-income economies with sizable holdings in Dubai is significantly larger than officially recorded. This finding has implications for the sustainability of the external debt of these countries and for macroeconomic modeling, as the net foreign asset position is a key state variable in standard open-economy macroeconomic models.[3] Second, our results suggest that the lack of cross-border exchange of information on real estate ownership is an issue for tax enforcement, depriving governments of income tax revenues (on rental income and capital gains) and wealth tax revenues (for the countries that tax wealth). Expanding the forms of international cooperation that currently exist for financial assets to real assets could help address this issue.

The rest of this paper proceeds as follows. Section 2 relates our work to the literature. Section 3 provides background and summary statistics for Dubai real estate. We analyze the distribution of its ownership across countries in Section 4 and across wealth groups in Section 5. Section 6 concludes.

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[3]See Coppola, Maggiori, Neiman, and Schreger (2021) for an analysis of how the use of offshore tax havens affects can affect net foreign asset positions; see also Zucman (2013).

2 Related Literature

2.1 Measurement of Offshore Wealth

Our paper first relates to the literature on offshore wealth. Current estimates of offshore wealth typically only cover financial wealth, i.e., bank deposits and portfolios of equities, bonds, and mutual fund shares owned by households in foreign financial institutions; see, e.g., Zucman (2014) and Alstadsæter, Johannesen, and Zucman (2018). There have nonetheless been some attempts at quantifying cross-border real estate.

The Tax Justice Network (2020b) estimates that global offshore real estate may add up to between USD 5 trillion and 10 trillion. This would imply that Dubai accounts for about 1.5 to 3 percent of global offshore real estate—a sizable share for a city-state that houses 3.5 million inhabitants, 0.04 percent of the world population. Morel and Uri (2021) and Bomare (2019) study foreign-owned real estate in France and London, respectively; see Section 3.3 for a comparison with our findings.

There is anecdotal evidence that Dubai's real estate markets attract foreign investors, but no systematic quantification to date. Based on the same raw source as those underlying this project, The New York Times (2022) reported on the ownership of Dubai properties by sanctioned Russian individuals, with holdings estimated to be in excess of USD 314 million. A previous version of the data has also been used to analyze individual cases. Starting in 2018, the Organized Crime and Corruption Reporting Project (OCCRP) and partnering media organisations analyzed Dubai property ownership by government officials (and family members) from countries like Armenia, Nigeria, Pakistan, and Russia (OCCRP 2018). The Boston Consulting Group (2021) estimates that offshore financial wealth held in the UAE amounts to USD 500 billion in 2020. Our findings thus imply that more than a fifth of all offshore wealth in Dubai (financial plus non-financial) is held in real estate. According to the Boston Consulting Group, offshore financial wealth in the UAE amounts to about 5 percent of global offshore financial wealth, making it the sixth largest offshore financial center in the world.

2.2 Impact of the Automatic Exchange of Bank Information

Our paper also relates to the burgeoning literature studying the effects of the international exchange of bank information, in particular the Foreign Account Tax Compliance Act (FATCA) in the United States in force since 2014, and the Common Reporting Standard (CRS) implemented in more than 100 countries since 2017 (e.g., Johannesen and Zucman (2014), Menkhoff

and Miethe (2019), Beer, Coelho, and Leduc (2019), Casi, Spengel, and Stage (2020), O'Reilly, Parra Ramírez, and Stemmer (2021)) .

An hypothesis in this literature is that these policies may have led owners of offshore assets to rebalance their wealth away from financial assets and towards real estate. Simone, Lester, and Markle (2020) compare changes in real estate prices in countries with no restrictions on foreign buyers and in countries with restrictions on purchases by foreign buyers. They find an increase in real estate prices in markets without foreign buyer restrictions relative to markets with foreign buyer restrictions after the implementation of FATCA, perhaps reflecting a shift towards real estate investments. Bomare and Le Guern Herry (2022) investigate how the introduction of the CRS has affected real estate investments in the United Kingdom. The G20 initiated the CRS process during the fall of 2013. In May 2014, 44 countries and jurisdictions signed committed to support the Common Reporting Standard. Bomare and Le Guern Herry (2022) group tax havens by their exposure to the countries that committed to introduce the CRS. Findings suggest that the introduction of the CRS caused an inflow of real estate investments via tax havens exposed to the CRS.

A related strand of the literature studies the effect of policies aimed at increasing reporting requirements for real estate purchases. Agarwal, Chia, and Sing (2020) investigate the differences between property transactions in Singapore in which people showing up in the Panama Papers were involved and other property transactions. They find that these individuals buy at a premium. They also find that the price of properties transacted by these individuals fell following two different measures to control cross-border cash movements and strengthen money laundering monitoring. Hundtofte and Rantala (2018) show how all-cash purchases of property for at least 1 million USD in Miami and at least 3 million USD in New York by corporations fell sharply after the US government required the owners of the corporations to identify themselves in January 2016. These types of purchases fell from 10 percent (30 percent in Miami) of the value of housing purchases to 2.5 percent.[4]

3   Real Estate in Dubai: Data and Summary Statistics

This section presents a macroeconomic analysis of real estate in Dubai. We start by presenting the context and our data, before turning to summary statistics.

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[4]Other papers studying the price effects of cross-border investments and the characteristics of foreign buyer include Badarinza and Ramadorai (2018), Puy, Ari, and Shi (2020), Cvijanovic and Spaenjers (2020), and Devaney, Scofield, and Zhang (2019).

3.1   Dubai: Context

Dubai is one of seven emirates in the United Arab Emirates and its largest city. It is the economic and financial center of the United Arab Emirates (The New York Times 2022). The emirate has more than three million inhabitants, only 8% of whom are Emirati nationals, according to official statistics (Dubai Statistics Center 2022). In spite of joining the Common Reporting Standard—the international framework for the automatic exchange of bank information—Dubai and the United Arab Emirates are often considered secrecy jurisdictions and tax havens. The United Arab Emirates ranks tenth in Tax Justice Network's 2020 Financial Secrecy Index (Tax Justice Network 2020a) and tenth in Tax Justice Network's 2021 Corporate Tax Haven Index (Tax Justice Network 2021). It is also one of 23 countries listed on the 2022 list of jurisdiction "under increased monitoring" (often referred to as the grey list) by the Financial Action Task Force, the intergovernmental organization in charge of combatting money laundering (Financial Action Task Force 2022).

Along with the hospitality sector, the real estate sector has been central to economic growth in Dubai. [5] It is also an important source of government revenue. Because there is no corporate tax, individual income tax, or estate tax, taxes generate less than 1 percent of GDP in revenue in the UAE. However, as detailed in Deloite (2022), there is a 4 percent transfer tax on real estate and a yearly property tax of 5 percent of the rental value of the property (10 percent for commercial properties). Selling land for development has also been an important income source for Dubai (Ali 2010). Foreigners have the right to buy, sell and rent property in Dubai without any special regulations or permissions. The costs of buying are not insignificant: in addition to the 4% transfer tax various fees apply (e.g., for property registration), and foreigners are required to make a down payment of at least 25% on their first home for properties valued under USD 1.36 million (35% for properties over USD 1.36 million, and 40% for second homes).

3.2   Presentation of the Dataset

Nature of the data.   Our analysis uses micro-data at the property obtained by the Washington-based nonprofit organization C4ADS. The dataset is based on private records compiled by UAE-based professionals in the real estate and property industry and provided to C4ADS by confidential sources. After having corroborated the accuracy of these data, C4ADS published case studies of the use of Dubai real estate by a number of sanctioned individuals (C4ADS

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[5]Dubai has little oil resources compared to Abu Dhabi and other Gulf economies. Income from oil production has fallen from around 25 percent of GDP in 1990 to 5 percent in 2020 (Store Norske Leksikon 2022).

2018). C4ADS then shared with us an updated version of the database, covering the year 2020.

The records include detailed information on ownership and property characteristics, including the property's size, details, location, and use of the property. Individual owners of properties are usually recorded, including their names and nationality. C4ADS assesses this dataset to be credible, with the caveat that it does not constitute evidence of the same legal standard as a property deed, a form of official documentation strictly controlled in the United Arab Emirates as confidential information. All our analyses are based on aggregating records at the country level (or across groups of individuals in the wealth distribution in Norway). The measures taken to ensure data and privacy protection are described in our online Data Protection and Ethics Statement.

Data cleaning. In the first step of our work, the raw data is cleaned and processed to give a comprehensive and accurate picture of the Dubai real estate market and the ownership of the different properties. Specifically, we exclude all non-privately owned real estate, infrastructure, and other properties that are not frequently traded and are neither residential, office space, or other type of living areas. We also exclude duplicates and winsorise the size variable at the 5th and the 95th percentile (for standard properties like apartments and villas) or the 1st and the 99th percentile (for larger properties and buildings). Many properties are registered with shared ownership. In this case, we create multiple observations for each property, with the correct value assigned to each co-owner based on how much of the property each owner possess. This means that the unit of observation in the processed dataset is either full or parts of properties.

Construction of owners' country. We construct the nationality of each property's owner by building on the information in the raw data. Because nationality is more easily observable than residency in these data, we focus on classifying property owners by nationality, while noting that nationality is not always the same as residency, that people can have multiple nationalities, and that data limitations mean we may sometimes capture residency as opposed to nationality. We proceed as follows.

For properties owned by individuals (64% of all properties in our data), we rely on the nationality information that is provided in the raw data. For more than 90% of the properties owned by individuals, nationality can be directly identified in this way. If nationality is missing, we impute it using information in the data on passport number, phone number, email address, and address of the owner, as well as public sources. The sources and algorithm used to conduct these imputations are detailed in Appendix B. In some cases, there is a possibility that we

capture residency as opposed to nationality, e.g., properties owned by Syrian nationals who live in Jordan might sometimes be assigned to Jordan.

Next, we assign properties owned by firms (36% of all properties in our data) as follows. Firms in our sample are identified by running an algorithm that looks for common terms and abbreviations like "Holding" and "S.A.R.L" among observations that do not have a passport number, followed by extensive manual cleaning. Our guiding principle is then to try to identify the nationality of the beneficial owners of these firms. To do so, we use the address, phone number, and email address reported in the data, as well as public sources such as information on the beneficial owner of shell companies appearing in the publicly-available ICIJ offshore leaks database.[6] Close to 90% of the properties owned by firms are owned by 581 large companies, mostly real estate development firms. We manually checked the nationality of these firms if no country was assigned to them after exploiting the information available in the data and in public sources. Of these large firms, 482 (owning 87% of properties belonging to large firms) are assigned to the UAE. We note that because we lack systematic information on the beneficial owners of UAE firms, our procedure can under-estimate the amount of Dubai real estate with foreign beneficial owners.

For about 7% of all owners (who own 19 percent of the properties in value), we are unable to identify a country. This corresponds to observation where there is no information about the owner, or where information about the owner exists but is too limited to identify a country (e.g., there is only a street name). In some cases it is possible to guess the country of nationality of the owner based on surnames, but we did not attempt to pursue this approach.

Because we aim at capturing nationality, our country classifications must be interpreted with care when analyzing the tax implications of offshore real estate. With few exceptions (e.g., the United States), taxation is based on residency, not nationality. This is the case in particular for Norway. Our analysis of the Norwegian sub-sample in Section 5 shows that several individuals in our data that have Norwegian citizenship are not residents of Norway and thus not taxable there. We take this fact into account in our analysis of the fraction of Norwegian-owned Dubai real estate that evades taxation.

Computation of property values. We calculate the value $V_{i,g}$ of a property i located in district g as:

$$V_{i,g} = S_i \cdot P_g \tag{1}$$

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[6]See https://offshoreleaks.icij.org/.

where S_i is the size of the property and P_g is the average square meter price in district g.

S_i and the district of the property is observable in the raw data. P_g is calculated using a publicly available dataset of comprehensive but anonymized property transactions in Dubai. The data is compiled by the Dubai Land Department and published through the Dubai Pulse portal. We calculate the average square meter price for residential properties sold between January 2018 to November 2020 for each district.[7] We report values in US dollars; the United Arab Emirates dirham has been pegged to the same US dollar value since November 1997 (1 USD = 3.6725 AED).

Summary statistics. Table 1 provides summary statistics after cleaning and imputing property values. The final dataset has 883,268 observations, covering the full range of properties, from small residential units to large commercial properties. The median property value in the dataset is USD 212,081 and the median property size is 81.7 m^2. The distribution of both property values and size is skewed to the right. The averages are almost three times the median for both variables. The least valuable property in the data is worth USD 12,081, while the most valuable is worth USD 2.3 billion. The smallest property (or share of property) is only 7.4 m^2, while the largest is 435,119 m^2. The square meter prices, which are the district-level average square meter prices, vary between USD 790 and USD 5,671. There is little difference between mean and median price per square meter: The large spread in values is mainly driven by the spread in size.

Table 2 shows breakdowns by type of property. Most properties are residential, with apartments as the largest category. There is also a sizable number of villas, hotel apartments, and hotel rooms. The categories building, commercial, and labor camp[8] include very large properties.

3.3 Aggregate Holdings: Dubai in a Global Perspective

Size of offshore real estate in Dubai. Panel A of Figure A2 reports our estimate of the aggregate value of Dubai properties. In total, the Dubai real estate market was worth USD 533 billion in 2020. This is equivalent to approximately 0.6 percent of world GDP. Out of this, we trace USD 287 billion to United Arab Emirates owners, USD 99 billion to owners with

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[7]We exclude the top and bottom 5 percent square meter prices from the calculation. The square meter prices from residential properties is used to value all properties, including commercial real estate.

[8]A labor camp is in the United Arab Emirates context is an accommodation facility for low-wage workers. According to local labor regulations, establishments with 50 or more workers must provide accommodation for their workers when the wage of each worker is less than AED 2,000 per month (USD 545 per month).

unknown nationality, and USD 146 billion to foreign owners. This USD 146 billion number is our benchmark estimate of the value of offshore real estate in Dubai and represents 27% of the entire value of all Dubai properties. USD 135 billion belongs to individuals for whom we observe nationality. An additional $11 billion corresponds to properties held by individuals for whom nationality is imputed or by firms that are likely to have a foreign owner. As shown by Panel B of Figure A2, the bulk of offshore Dubai real estate is divided evenly between three regions: Middle East and North Africa; South Asia; and Europe and Central Asia. Only 15 percent is held by owners from Sub-Saharan Africa, North America, and East Asia and Pacific.

Because some of the properties with unknown owners (and some owned by firms and assigned to the UAE) may belong to foreigners, our benchmark estimate for the value of offshore real estate in Dubai should be seen as conservative. However, the order of magnitude we obtain (0.2% of world GDP, and 27% of all Dubai real estate) is likely to be reliable. To quantify the uncertainty involved, recall that about 7 percent of all owners (who own 19 percent of the properties in value) have untraceable nationality.[9] If half of this wealth belongs to non-residents, offshore real estate in Dubai would add up to USD 195 billion (0.2% of world GDP, 36% of total Dubai real estate). We can compare this number to offshore financial wealth in Switzerland, where high quality statistics on offshore financial assets are published (Zucman 2013). Offshore wealth in Switzerland peaked at 5 percent of world GDP in 2007 and was around 3 percent of world GDP in 2015 (Alstadsæter, Johannesen, and Zucman 2018), i.e., an order of magnitude larger than offshore Dubai real estate.

Comparison with other real estate markets. Panel A of Figure 2 compares our estimate of Dubai offshore real estate to the few studies of cross-border real estate in other countries. To our knowledge the most comprehensive estimate is for France. Morel and Uri (2021) find that USD 140 billion worth of French residential real estate was owned by non-residents at the end of 2019 (1.5 percent of total residential French real estate). In absolute terms, our estimate of foreign-owned real estate in Dubai (USD 146 billion) is slightly larger.

Bomare (2019) studies the ownership of London real estate by combining the UK public registry of properties owned by foreign shell companies with information from the Panama Papers and related leaks on the ownership of shell companies. She finds that London real estate owned by shell companies amounts to about US 95.4 billion (GBP 74.7 billion) in 2019. When

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[9]Among those, 3 out of 4 appear to be persons, but the information in the database in insufficient to establish with certainty their residency or nationality (e.g., the listed address of the owner includes a street name but not the city name). 1 out of 4 appear to be firms.

excluding companies that likely have British owners, the figure comes down to USD 66.3 billion (GBP 51.9 billion), less than half the value of offshore real estate in Dubai. Bomare's (2019) USD 66.3 billion figure only includes London real estate owned by foreign firms registered in tax havens. It excludes cross-border ownership involving UK companies or non-haven companies, or direct ownership by foreign individuals. However, the bulk of foreign-owned London real estate is believed to be held through offshore shell companies, as this has historically allowed owners to avoid stamp duty taxes and was thus a common tax avoidance strategy (Bomare and Le Guern Herry 2022).[10]

Panel B of Figure 2 compares the regional distribution of Dubai and London real estate ownership. In our regional groupings, we only include the countries for which Bomare (2019) has observations, which excludes approximately 1/4 of the Dubai values. As the figure shows, country patterns have similarities. The main difference is that South-Asian owners are the largest owner group in Dubai, but not much present in London. Europe and North Africa are also notably more represented in Dubai than in London. Middle-East ownership is larger in London than Dubai, which is likely driven by the large United Arab Emirates presence in London (the figure does not include the United Arab Emirates ownership of Dubai property).

4 Ownership Across Countries

4.1 Country Distribution

Absolute amounts. Figure 3 presents a global map of real estate wealth held in Dubai by country.[11] The main owners of Dubai real estate in absolute terms are large neighboring countries (such as India, Pakistan, Saudi Arabia, Iran, Russia) and a number of large, often English-speaking economies (United Kingdom, United States, Canada; and to a lesser extent China, Germany, France). Figure 4 zooms into the top 20 investing countries, which altogether own around 80% of offshore Dubai real estate. India is the country with the largest ownership both by value and number of owners. Nearly 35,000 Indians own real estate in Dubai, worth almost USD 30 billion (20% of total Dubai offshore real estate). The second largest investor is the United Kingdom with more than 23,000 different UK owners and USD 15 billion in assets (10% of the total). This highlights the role of geographical proximity and historic ties: Dubai (along with the other precursor states of the United Arab Emirates) was a British protectorate

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[10]Investments from foreign shell companies amounted to between 4 and 6 percent of total real estate investments in England and Wales in the period 2014-2019 (Bomare and Le Guern Herry 2022).

[11]Appendix E reports detailed and comprehensive statistics at the country level.

until 1971, with foreign policy and defense assumed by the British government.

A number of additional remarks are in order. First, the large holdings by neighboring countries might partly reflect the large immigrant population in Dubai. About 90% of the population living in the UEA are immigrants, with the bulk coming from South Asia. However, most migrants are low-wage workers, housed in large labor camps often spanning multiplier employers (Naidu, Nyarko, and Wang 2016). These workers lack the funds to buy a house and for that reason are unlikely to account for a significant share of property ownership by nationals of neighboring countries. With the data at our disposal, however, we stress that we cannot tell whether foreigners owning property in Dubai primarily live there or not.

To alleviate concerns that our country distributions primarily reflect the origin of migrant workers living in the Dubai, it is instructive to focus on property ownership in the most affluent neighborhoods and buildings, which primarily cater to non-residents. This includes the Dubai Marina (along the shoreline); the exclusive Palm Jumeirah, Palm Jebel Ali, and Palm Deira islands (artificial islands shaped as a palm tree); the Burj Khalifa (the tallest building in the world); and gated communities like Arabian Ranches. Properties in these districts and buildings are worth more than USD 100 billion (about a fifth of the total value of Dubai real estate). According to our estimates, almost half of this real estate is owned by foreigners (as opposed to 27% for total Dubai real estate). As reported in Appendix C, the country distribution of ownership in that sub-sample is similar to the one seen in the entire city-State. The main differences is that while India remains the largest owner, its share of foreign-owned real estate falls, while the share of Russia rises. In the most most exclusive neighborhoods the fraction of offshore real estate owned by Russians rises to 6%, as opposed to about 3% for Dubai real estate overall.

Dubai holdings relative to GDP. Figure 5 presents a global map of real estate wealth held in Dubai by country, scaled by the investing country's GDP. The picture that emerges is somewhat different from the one that emerged in Figure 3. Neighboring countries still appear at the top of the ranking. But the United States, China, and European Union countries—which had sizable holdings in absolute terms—have small holdings relative to the size of their economy, equivalent of less than 0.05% of their GDP. With the exception of the United Kingdom (0.5% of GDP, similar to countries like Tunisia and Kazakhstan) and Canada (0.3% of GDP), the ranking is dominated by low-income countries.

Figure 6 focuses on the top 20 countries by size of Dubai property holdings to GDP. We

exclude tax havens and countries and territories with citizenship by investment territories, analyzed below. Excluding these territories, Jordan has the largest ratio of Dubai real estate investments to GDP (more than 12%), as shown in Panel A. Other countries at the top of the list include conflict-ridden countries like Afghanistan, Syria, Yemen, and Sudan; countries under autocratic rule like Eritrea, Azerbaijan and Tajikistan; and neighboring countries such as Lebanon, Pakistan, Kuwait, and Iran. Panel B shows average Dubai holdings per owner, expressed as a multiple of GDP per capita (a proxy for average income) in the investing country. The top countries by this measure are mainly African and Asian countries. Sierra Leone, Afghanistan and Mozambique rank at the top, with multiples of 3,748, 2,560 and 2,326 respectively. For example, owners from Sierra Leone on average hold real estate in Dubai worth $2 million, which is equal to 3,748 times the GDP per capita of Sierra Leone. This measure underlines the importance of Dubai real estate for elites in low-income countries.

Ownership by tax havens. Figure 7 reports Dubai property statistics for tax havens and for the countries and territories that have (or recently had) a citizenship-by-investment program. The construction of our list of tax havens and citizenship-by-investment territories is detailed in Appendix D. Altogether, these territories "own" USD 7.9 billion worth of Dubai properties (of which USD 3.5 billion comes from citizenship by investment countries), which represents 5% of total offshore Dubai real estate. This relatively small fraction reflects the fact that in many cases, the data allow us to trace the beneficial owners of properties, even when these are held through companies with addresses in tax havens.

A number of points are worth noting about tax havens. First, as shown by the top panel of Figure 7, some of these territories tend to have extremely high ratios of Dubai property wealth to GDP, as high as 141% in Saint Kitts and Nevis and 37% in the British Virgin islands. This suggests that the bulk of the Dubai properties assigned to these territories in fact belongs to investors from other countries. Second, the properties owned by tax havens tend to be more expansive on average than other foreign-owned properties. The mean property value in Dubai is USD 603,000. But properties owned by Antigua and Barbuda are worth USD 3.6 million on average, and properties owned by Cyprus, American Samoa, Jersey, Puerto Rico, and Gibraltar worth between USD 1 and USD 1.5 million on average. This suggests that investments in the most luxurious Dubai properties are more likely to be conducted through opaque shell companies.

Correlation with Swiss offshore wealth. Figure 8 plots the value of real estate held in Dubai against financial assets in Swiss banks in 2007 (both relative to GDP). The sample includes the top 15 countries by Dubai real estate investments to GDP. The data on offshore financial wealth in Swiss banks is taken from Alstadsæter, Johannesen, and Zucman (2018), Appendix Table A.3. We omit Jordan, an outlier with by far the largest ratio of Swiss offshore financial to GDP according to Alstadsæter, Johannesen, and Zucman (2019) and the largest ratio of Dubai properties to GDP according to our results. As noted in Section 3.3 above, offshore financial wealth in Switzerland is on aggregate an order of magnitude larger than offshore real estate in Dubai, hence the order of magnitude difference between the scale of the x-axis and y-axis.

The Figure shows a strong correlation between offshore financial wealth in Switzerland in 2007 and offshore property wealth in Dubai in 2020. In the full sample of countries considered by Alstadsæter, Johannesen, and Zucman (2019), a regression of the amount of wealth held in Dubai properties in 2020 on the amount of financial wealth held in Switzerland in 2007 controlling for GDP in 2020 delivers an elasticity of 0.3 (s.e. of 0.11). There are at least two ways to interpret this finding. First, this correlation may reflect substitution away from financial assets and towards real estate during the period 2007 to 2020, as a result of the introduction of the automatic exchange of bank information. Second, it may be due to the effect of other variables correlated with both types of offshore investments, such as a history of political and economic instability. To shed light on this issue, we now turn to more systematic regression analysis of Dubai property ownership.

4.2 Gravity Equation Results

We study the determinants of property ownership in Dubai using gravity-like models that have been successfully used to study cross-border financial investments; see, e.g., Portes and Rey (2005) and Lane and Milesi-Ferretti (2008). We estimate models of the form:

$$log(Dubai_i) = \alpha + \beta X_i + \epsilon_i \qquad (2)$$

where $Dubai_i$ is the value of Dubai real estate or the number of Dubai properties owned by investors from country i. Explanatory variables X_i include distance with Dubai in log, time zone difference, a dummy for sharing border, GDP and GDP per capita in log, log deposits in Swiss banks in 2020, a tax haven dummy, a dummy for whether the United Arab Emirates has a tax treaty with country i, and a dummy for sharing the same language. We run specifications

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both in the full sample of investing countries with a dummy for being a tax haven, and in the sub-sample of non-haven countries.

Results are reported in Table 3. Consistent with Figure 3, proximity with Dubai and country size are strongly positively correlated with property ownership in the Emirate, with elasticities of 1.5–1.7 for distance and 0.5–0.8 for GDP. Common language is also strongly positively correlated with Dubai investments. In our preferred specification (col. 2), Arabic-speaking countries have $e^{1.33} - 1 = 2.8$ times more Dubai real estate wealth than non-Arabic speaking countries, all else equal. Time zone differences do not appear to matter, in contrast to what is found in the literature on cross-border financial investments. Average income per capita (as proxied by GDP per capita) is marginally significant with an elasticity of -0.1 to -0.25, indicating that poorer countries are somewhat more likely to invest in Dubai, consistent with Figure 5. There is some evidence that having a tax treaty with the UAE is positively correlated with investing in Dubai properties but the effect is noisy.

The level of deposits held in Swiss banks in 2020 is positively and significantly correlated with Dubai property ownership, with elasticities of 0.2–0.3. This elasticity does not significantly change when adding controls for distance, common language, and other covariates, relative to the value of 0.3 obtained above when only controlling for GDP. One interpretation is that this correlation reflects the effect of un-modeled push factors that matter for the decision to hold assets—whether financial or non-financial—offshore, such as a history of political or economic instability (Alstadsæter, Johannesen, and Zucman 2018). Patterns of cross-border investments in Dubai thus share commonalities with other offshore investments, although Dubai real estate appears to be particularly attractive to neighboring countries, large economies, and Arabic-speaking countries.

As is common in the literature, the R^2 from these gravity-like regressions is very high, around 0.7–0.8. Simple gravity models can predict patterns in cross-border investments remarkably well. This is especially the case when excluding tax havens from the sample of investing countries. This is unsurprising, given then properties assigned to tax havens are likely to in fact belong to owners from other countries. Tax havens have $e^{0.38} - 1 = 46\%$ more Dubai real estate wealth than non-havens countries, all else equal, but the effect is noisy. The high R^2 of gravity-type models suggests that such models could be fruitfully used to allocate offshore real estate held in other cities (e.g., New York, Paris, Singapore) event absent bilateral data on their owners. We explore this possibility in ongoing research.

5 Ownership Across Wealth Groups & Tax Compliance

5.1 Ownership Across Wealth Groups

This Section analyzes how the ownership of Dubai real estate varies across the wealth distribution, following Alstadsæter, Johannesen, and Zucman (2019). We conduct this analysis for the subsample of Norwegian owners of Dubai properties. Norwegian journalists received a dataset with the Norwegian owners of Dubai properties from C4ADS. They merged it with publicly available tax record information for these owners.[12] The journalists then shared the anonymized merged dataset with us for analysis.

Residency in Norway vs. nationality. In a first step, the sample was restricted to individuals who are tax residents in Norway. Any tax resident of Norway is liable for tax on their worldwide income and wealth, unless exempt under a tax treaty (which Norway does not have with the United Arab Emirates). Domestic income and wealth are typically third-party reported and pre-filled on the taxpayer's annual tax statement and taxpayers are required to self-report any foreign income or wealth.

However, the tax residency status of a particular Norwegian national is not publicly available. To establish who among the 259 Norwegian individuals owning Dubai properties in our data are tax resident in Norway, the journalists used information gained in Freedom of Information requests, tax record information, and other public sources. If uncertainty remained at the end of this process, the journalists assigned Norwegian tax residency if the individual had i) at least 100,000 NOK in reported income in 2018, ii) a tax liability commensurate with reported income and wealth, and iii) a place to live in Norway. The final sample includes 172 Norwegian tax residents. This is a conservative estimate of how many owners of Dubai properties are tax residents in Norway.

Wealth distribution from administrative micro data. To rank these owners of Dubai properties in the Norwegian wealth distribution, we construct quantiles of taxable wealth in 2018 using administrative data. These anonymized data were delivered by Statistics Norway and contains detailed information on income and wealth from the individual tax statements, rounded and blurred to ensure anonymity. We consider 12 bins of wealth: P0-50 (bottom 50%

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[12]There is a long-standing tradition of transparency regarding tax records in Norway. Journalists can access tax record information in bulk. Regular citizens can access the same data, but only one observation at a time. People requesting such information must identify themselves when accessing the tax record of another person, and the person whose tax return is checked is notified.

of the wealth distribution), P50-60, P60-70, P70-P80, P80-90, P90-95, P95-99, P99-99.5, P99.5-99.9, P99.9-99.95, P99.95-99.99 and P99.99-100 (i.e., the top 0.01%). For each of these bins, we calculate the threshold of net taxable wealth, allowing us to place Norwegian tax residents with properties in Dubai in their respective bin.

We compute three measures of the net wealth of Dubai property owners and report results for all three:

1. Net taxable wealth, as reported in the tax records, thus excluding Dubai property wealth.

2. Reported net taxable wealth plus taxable Dubai property wealth (high discount). The tax value of Dubai property wealth is computed using our estimate of the market value and the discount applicable to these properties as per the Norwegian wealth tax rules. For properties that are not rented out, the discount rate is 70%, meaning the tax value is only 30% of the market value. In this measure, we assume that none of the Dubai properties are rented out.[13]

3. Reported net taxable wealth plus taxable Dubai property wealth (low discount). The tax value of Dubai property wealth is computed using our estimate of the market value and the discount applicable to properties that are rented out, which in this case is is 20%, meaning the tax value is 80% of the market value. This measure assumes that all Dubai properties are rented out.

Figure 9 shows how the ownership is distributed across different wealth groups. In prior research, Alstadsæter, Johannesen, and Zucman (2019) found that the probability to own offshore financial wealth and offshore shell companies rises steeply with wealth. The ownership of Dubai real estate wealth exhibits the same gradient. If some owners of Dubai real estate also fail to report other assets (e.g., offshore financial assets or offshore real estate in other countries), then Figure 9 under-estimates the true fraction of wealthy Norwegians with real estate in Dubai. Our estimates should thus be seen as conservative.

5.2 Tax Compliance

Does offshore real estate typically evade taxation, or is most of it duly reported to tax authorities? To shed light on this question, we requested and received aggregated summary statistics from the Norwegian Tax Administration on the value of properties in the United Arab Emirates reported by Norwegian tax residents in 2019. The data is not available for Dubai separately,

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[13]Net taxable wealth may be negative due to debt and valuation discounts. Negative net taxable wealth is reported as zero in the data on Dubai property owners. For measures 2 and 3, we impute the average taxable wealth of people with zero or negative taxable wealth (NOK -924,500) to those with a reported net taxable wealth of zero.

and cover properties owned by persons and by businesses. This means we cannot compute the exact fraction of Dubai real estate wealth duly declared by Norwegian taxpayers, but an upper bound for that fraction (or a lower bound for the fraction of Dubai real estate wealth that was not duly declared).

Panel A of Figure 10 shows that the number of properties in our data that are owned by people identified as Norwegian tax residents is more than three times the total number of properties in the United Arab Emirates reported to the Norwegian tax authorities. Only 66 properties in the United Arab Emirates were reported in 2019. This is much less than the 227 Dubai properties owned by our sample of Norwegian tax residents, and implies that at least 70% of Dubai properties were unreported. Panel B of Figure 10 shows the implications of this finding in terms of unreported values. We construct three different measures of the market value of unreported Dubai real estate. In the most conservative valuation, we assume that all reported properties in the UAE are rented out, so that their market value is 1.33 times their tax value. For our preferred estimate, we assume that half of reported properties are rented out and half are not (for those, the market value is 3.33 times the tax value). In our upper bound estimate, we assume that no reported properties are rented out. In all cases, we assume that all reported properties in the UAE are in Dubai. This means that we slightly under-estimate unreported Dubai real estate.

We estimate that Norwegian tax residents own property worth USD 65.4 million in Dubai. Of these, only USD 15.2 million was duly reported in our baseline estimate.[14] More than 75% of Dubai real estate wealth owned by Norwegian households appears to be unreported. Because Norwegian tax residents are taxable on their global assets, these cases likely correspond to tax evasion. Moreover, since offshore real estate typically goes unrecorded in macroeconomic household balance sheets and appears to be concentrated at the top, this finding implies that estimates of wealth concentration based on combining household balance sheets with tax data are likely to under-estimate wealth concentration. We leave a full quantitative analysis of the implications of offshore real estate for inequality to future research.[15]

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[14]We have only information about the aggregate taxable value, which are the value after the valuation discounts in the wealth tax scheme are applied. Our maximum estimate assumes that all reported properties are reported as non-commercial holiday homes (which gives a discount of 70 %). Our minimum estimate assumes that all reported properties are reported as rented out or commercial property (which gives a discount of 25 %). The baseline estimate assumes a 50-50 split.

[15]Zucman (2019) presents illustrative computations of how accounting for offshore financial wealth may affect measured inequality, but these computations disregard real estate and other non-financial assets.

6   Conclusion

This paper provides a thorough analysis of foreign investment in Dubai real estate. Cross-border ownership of real estate is a blind spot of existing statistics on international investments. Our data allow us to shed light on this under-studied aspect of financial globalization. A number of findings stand out. First, offshore real estate in Dubai is large—at least USD 146 billion in 2020, about twice as much as in London. Second, geographical proximity and historic ties seem to be important determinants of foreign investments in Dubai. About half of offshore Dubai real estate is owned by nationals of India, the United Kingdom, Pakistan, Saudi Arabia, and Iran. Other large investors in absolute terms include Canada, Russia, and the United States. Third, some countries have large holdings in Dubai relative to size of their economy, equivalent to 5%–10% of their GDP: conflict-ridden countries like Afghanistan, Syria, Yemen, and Sudan; autocracies like Eritrea, Azerbaijan and Kyrgyzstan. Last, by matching properties owned by Norwegians to administrative tax records in Norway (a country that taxes wealth), we find that the probability to own offshore real estate rises sharply with wealth, including within the very top of the wealth distribution. At least 70% of Dubai properties owned by Norwegian taxpayers were not reported for tax purposes in 2020.

These results inform ongoing debates about the measurement and regulation of cross-border wealth and have implications for global imbalances, for tax enforcement, and for assessing the effectiveness of recent policies aimed at improving the exchange of information between countries. There has long been a concern that real estate is used for money laundering and hiding wealth from tax authorities. However, to date there was very little data to quantify this issue, as most estimates of offshore wealth focus on financial assets. Our findings suggest that offshore real estate is quantitatively significant. Moreover, in the case of Norway, the bulk of this wealth appears to go unreported for tax purposes. This is despite the fact that Norway and Dubai agreed in 2015 to automatically exchange financial information under the common reporting standard. This finding illustrates the limitation of the current forms of international information exchange and suggests that additional policies—such as information sharing on the owners of real estate—may be required to create transparency and curb tax evasion through offshore financial centers.

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Figure 1: Value of Real Estate in Dubai in 2020 (Billion $)

(a) Domestic vs. Foreign-Owned
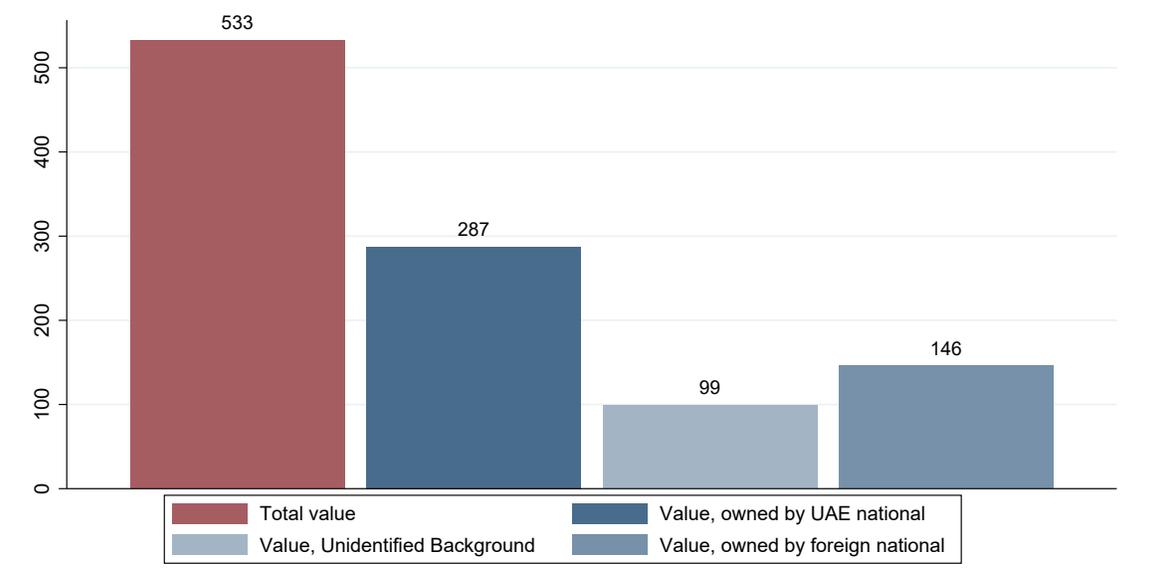
(b) Foreign-Owned: by Region
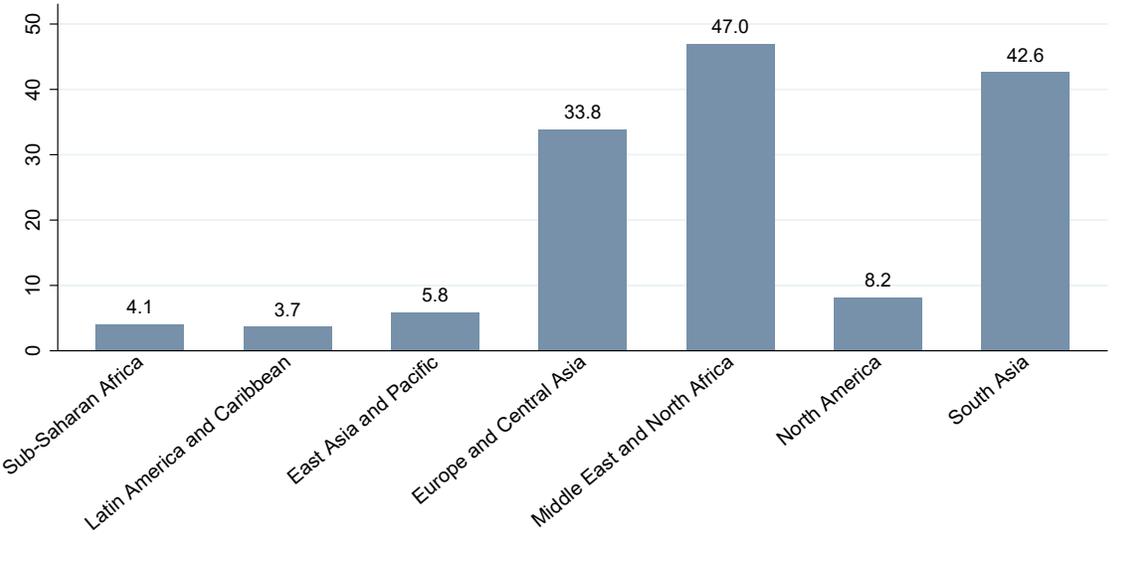
Notes: This figure shows the aggregate market value of Dubai real estate in 2020. Panel A) breaks down this aggregate into domestically-owned, foreign-owned, and uncertain owner's nationality/residency. Panel B) shows the total value of foreign-owned real estate broken down by regions. The regions are based on the World Bank classification of countries. All values are USD billions.

Figure 2: Offshore Real Estate: Dubai vs. Other Cities and Countries

(a) Estimates of offshore real estate wealth
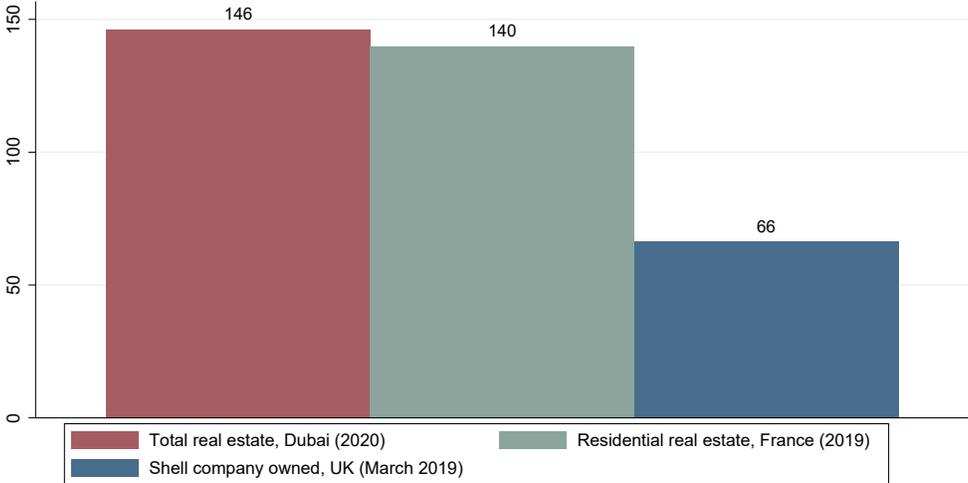
(b) Dubai region distribution vs. London region distribution
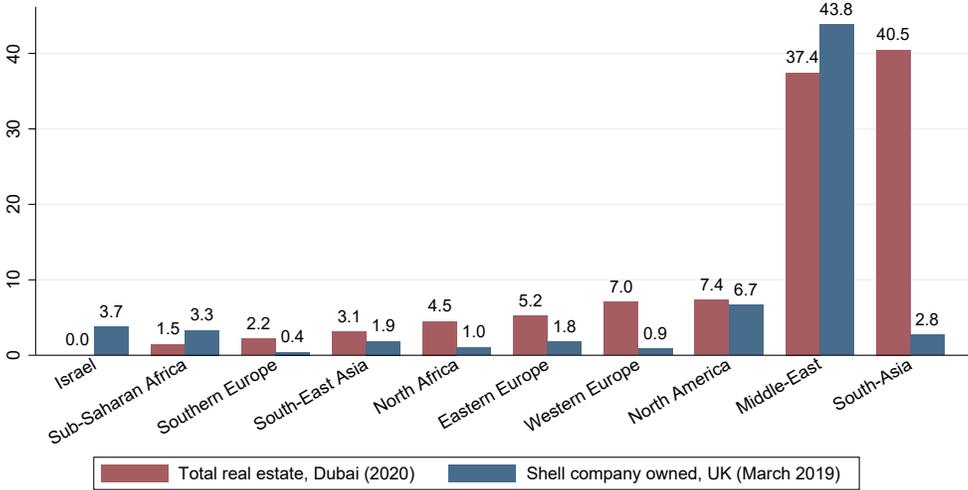
Notes: This figures compares foreign-owned real estate in Dubai in 2020 to foreign-owned real estate in London and in France. Panel A) shows the value of residential real estate in France owned by non-residents, retrieved from Morel and Uri (2021), and the value of London real estate owned by foreign shell companies with non-British owners, from Bomare (2019). Panel B) breaks down foreign-owned real estate in Dubai and in London by regions. The regions in panel B) are based on the classification of countries used in Bomare (2019). We only use the countries for which Bomare (2019) has observations in the regional grouping, which excludes approximately 1/4 of the Dubai values. All values are USD billions.

Figure 3: Value of Real Estate Held in Dubai by Country in 2020 ($ Billion)

Legend:
- (1,287.3] (26)
- (.25,1] (27)
- (.08,.25] (23)
- (.015,.08] (31)
- (.002,.015] (35)
- [0,.002] (18)
- No data (48)
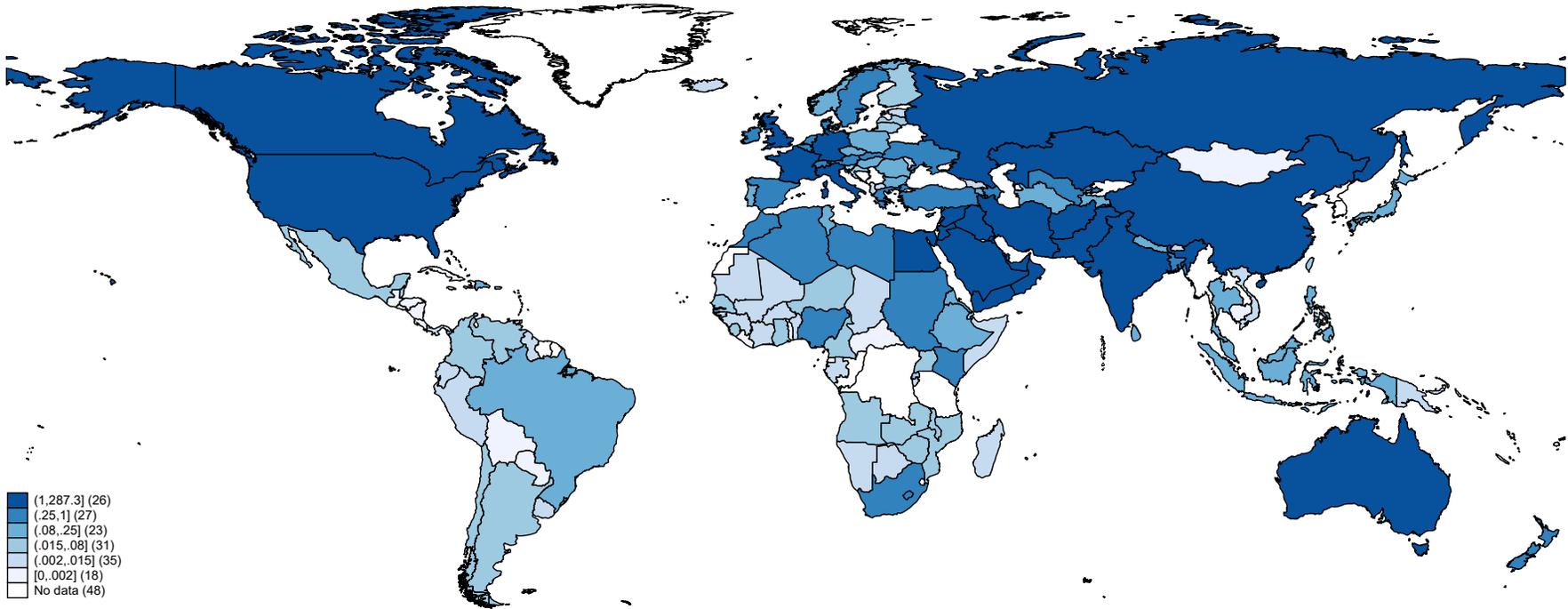
Notes: This map shows the value of properties in Dubai by country of owner. The range of values for each shade of blue is shown in the square brackets in the bottom left corner, with the number of observations in each bin in parenthesis. Values are in USD billions. The top country by owner is the United Arab Emirates with properties worth USD 287.3 billion.

Figure 4: Real Estate Held in Dubai in 2020: Top 20 Countries

(a) Total Value (billions of USD)

World average = 0.9

Countries (left to right): Kitts And Nevis (1.5), Germany (1.8), France (2.0), Qatar (2.1), Oman (2.2), Iraq (2.6), China (2.7), Syria (3.0), USA (3.0), Russia (3.3), Lebanon (3.4), Egypt (3.4), Kuwait (3.8), Canada (5.2), Jordan (5.2), Iran (7.0), Saudi Arabia (9.8), Pakistan (10.6), United Kingdom (14.7), India (29.8)

(b) Unique Owners

World average = 1,189

Countries (left to right): Sudan (1,866), Ireland (1,871), Germany (2,109), Italy (2,407), Iraq (2,721), France (3,256), Kuwait (3,444), Syria (4,484), Lebanon (4,495), USA (5,085), China (5,179), Russia (5,381), Jordan (5,555), Canada (5,694), Egypt (6,202), Iran (8,669), Saudi Arabia (9,875), Pakistan (19,662), United Kingdom (23,136), India (34,876)

Notes: This figure shows statistics on the ownership of real estate in Dubai by the top 20 investing countries (other than the United Arab Emirates). Panel A) shows the value of Dubai real estate owned by these countries, in USD billions. Panel B) shows the number of owners. World average is the average for all non-UAE countries.

Figure 5: Value of Real Estate Held in Dubai by Country in 2020 (% of GDP)

Legend:
(1,68.1] (21)
(.2,1] (23)
(.1,.2] (21)
(.05,.1] (20)
(.015,.05] (22)
[0,.015] (26)
No data (47)
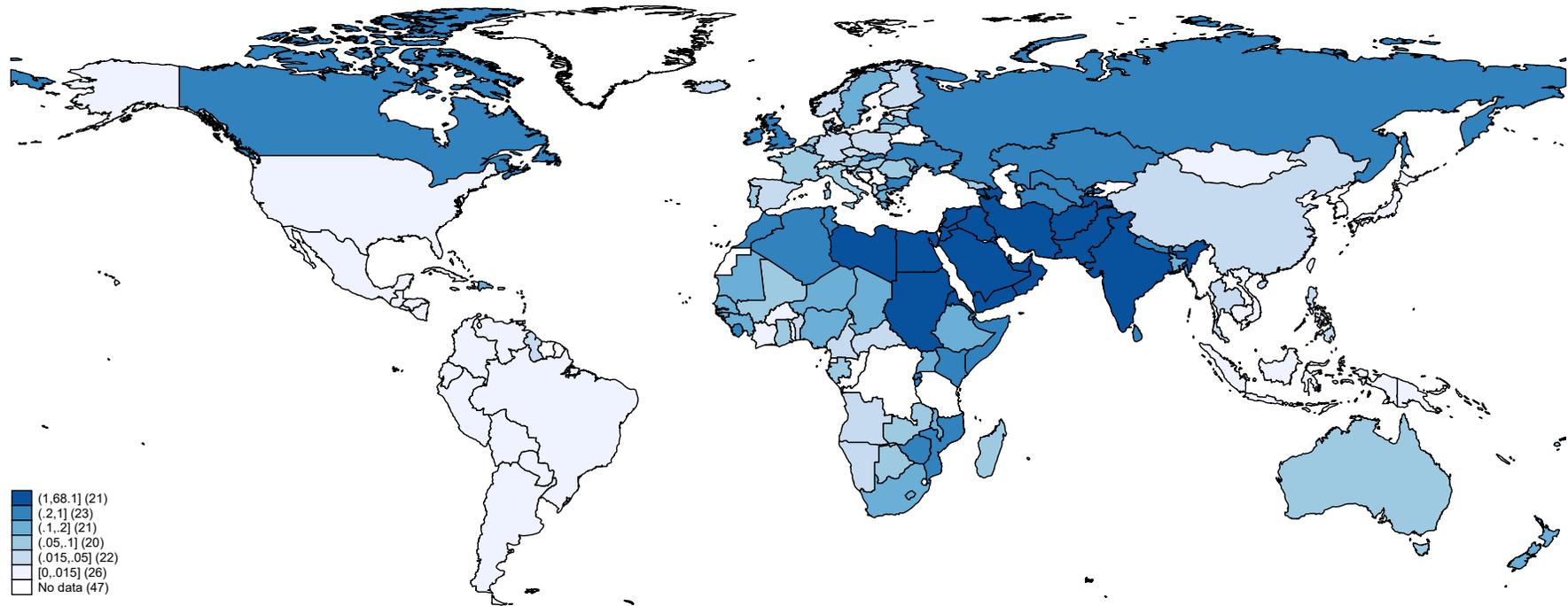
Notes: This map shows the value of properties held in Dubai by investing country, relative to the investing country's GDP. The range of values for each shade of blue is shown in the square brackets in the bottom left corner, with the number of observations in each bin in parenthesis.

Figure 6: Real Estate Held in Dubai in 2020, Relative to GDP: Top 20 Investing Countries

(a) Total Value (% of GDP)

World average = 0.67

India 1.10, Iraq 1.14, Qatar 1.16, Kyrgistan 1.24, Saudi Arabia 1.24, Egypt 1.38, Tajikistan 1.57, Azerbaijan 1.57, Armenia 1.67, Oman 2.37, Iran 2.39, Kuwait 2.75, Sudan 3.04, Pakistan 3.38, Eritrea 4.53, Yemen 4.83, Lebanon 6.15, Syria 7.37, Afghanistan 7.81, Jordan 12.11

(b) Average Value (Multiples of GDP Per Capita)

World average = 339

Ethiopia 645, Sudan 681, Kyrgistan 737, Uganda 772, Somalia 836, Mali 887, Senegal 1,009, Southern Sudan 1,034, Rwanda 1,093, Malawi 1,156, Niger 1,271, Tajikistan 1,300, Yemen 1,426, Guinea 1,552, Burundi 1,725, Chad 1,765, Nepal 2,279, Mozambique 2,326, Afghanistan 2,560, Sierra Leone 3,748

Notes: Panel A) shows the value of properties owned in Dubai divided by GDP, for the top 20 investing countries excluding tax havens and citizenship by investment countries. Panel B) shows how the average real estate values in Dubai compare to GDP per capita in the investing country, for the top 20 investing countries excluding tax havens and citizenship by investment countries. A value of 1,000 means that the owners from a country on average holds real estate in Dubai that amounts to 1,000 times the GDP per capita in that country. Countries with less than 5 unique owners of Dubai real estate are excluded from the figure. World average is the average for all non-UAE countries (with 5 or more unique owners of Dubai real estate), excluding tax havens and citizenship by investment countries. The list of citizenship by investment countries and tax havens are available in Appendix D.

Figure 7: Real Estate Held in Dubai by Country in 2020: Tax Havens and Citizenship by Investment Countries

(a) Total Value (% of GDP)

World average = 2.16

Montenegro 0.14, Singapore 0.15, Barbados 0.18, Maldives 0.23, Guernsey 0.29, Jersey 0.31, Mauritius 0.33, Belize 1.32, Cyprus 1.37, Grenada 1.60, Malta 1.70, Bahamas 2.37, Bahrain 3.77, Antigua & Barbuda 7.81, Comoros Islands 8.08, Cayman Islands 10.24, Dominica 18.32, Seychelles 18.95, British Virgin Islands 37.31, Saint Kitts And Nevis 140.86

(b) Average Value (Multiples of GDP Per Capita)

World average = 303

Chile 55, Bahrain 56, Maldives 69, Malta 74, Jersey 75, Montenegro 77, Turkey 78, Panama 94, Barbados 105, Cyprus 135, Grenada 137, Bahamas 143, Saint Kitts And Nevis 167, Dominica 226, Belize 241, British Virgin Islands 247, Seychelles 278, Comoros Islands 405, Antigua & Barbuda 537, Cayman Islands 1,095

Notes: Panel A) shows the value of properties owned in Dubai divided by GDP, for the top 20 tax havens and citizenship by investment countries. Panel B) shows how the average real estate values in Dubai compare to GDP per capita in these countries. A value of 1,000 means that the owners from a country on average holds real estate in Dubai that amounts to 1,000 times the GDP per capita in that country. Countries with less than 5 unique owners of Dubai real estate are excluded from the figure. World average is the average for all non-UAE countries (with 5 or more unique owners of Dubai real estate), including tax havens and citizenship by investment countries. The list of citizenship by investment countries and tax havens are available in Appendix D.

Figure 8: Real Estate Wealth in Dubai vs. Offshore Financial Assets in Switzerland (% of GDP)
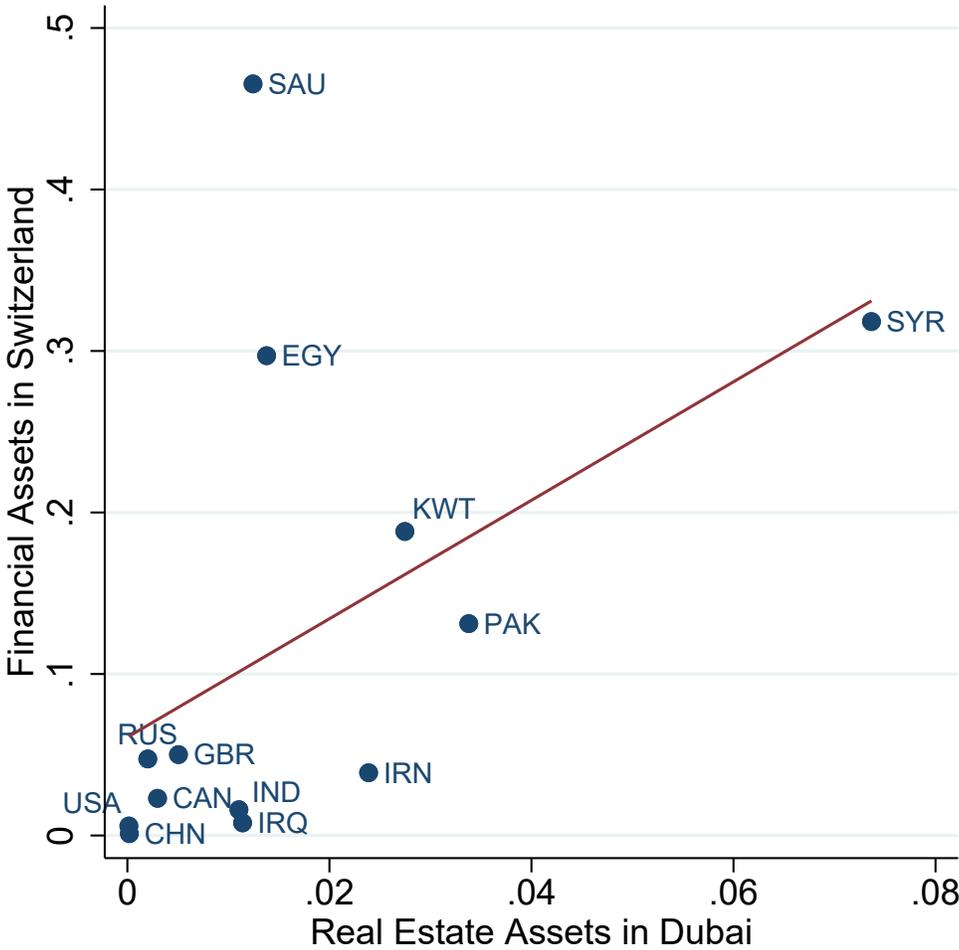
Notes: This figure plots countries' real estate holdings in Dubai against their offshore financial assets in Swiss banks, in both cases as a percent of GDP. Offshore financial wealth in Switzerland is for the year 2007 and taken from Alstadsæter, Johannesen, and Zucman (2018). The sample of countries shown is the top 15 countries ranked by total real estate values in Dubai, with the exception of Jordan, an outlier with both the highest holdings in Swiss banks and highest investments in Dubai real estate relative to GDP.

Figure 9: Ownership of Dubai Properties Across Wealth Groups
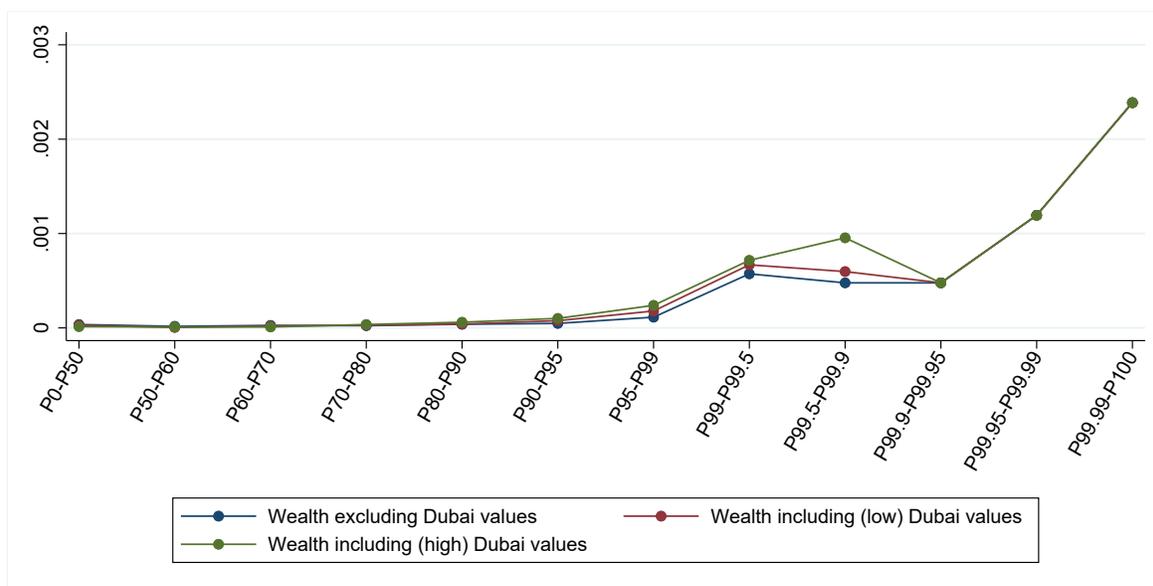
Notes: This figure shows the probability to own real estate in Dubai across the distribution of wealth in Norway. A value of 0.002 for a given group means that 0.2% of all Norwegian taxpayers in that group appear in our data as owning a property in Dubai. The sample of Norwegian Dubai property owners include the 172 owners of Dubai real estate who are identified as Norwegian tax residents. In the blue line, the wealth of these owners is measured as their reported taxable net wealth before adding the value of Dubai properties. In the red and green lines, their wealth is measured after adding the value of their Dubai properties. The red line converts the market value of Dubai properties to Norwegian tax values using the discount rate for holiday homes (70 %). The green line uses the discount rate for commercial property (25 %). In our data, reported taxable wealth when negative is reported as zero. For both the red and the green lines, we replace 0 by NOK -924,500, which is the average net taxable wealth of Norwegian taxpayers with zero or negative taxable wealth.

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Figure 10: Reported vs. Total Dubai Real Estate of Norwegians

(a) Number of properties
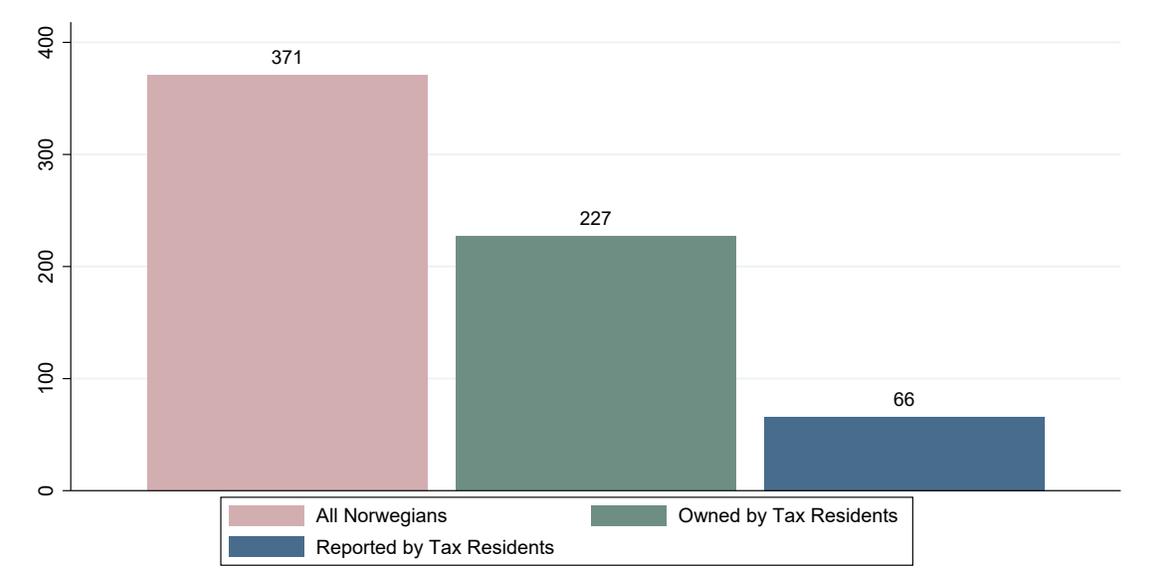
(b) Value of properties
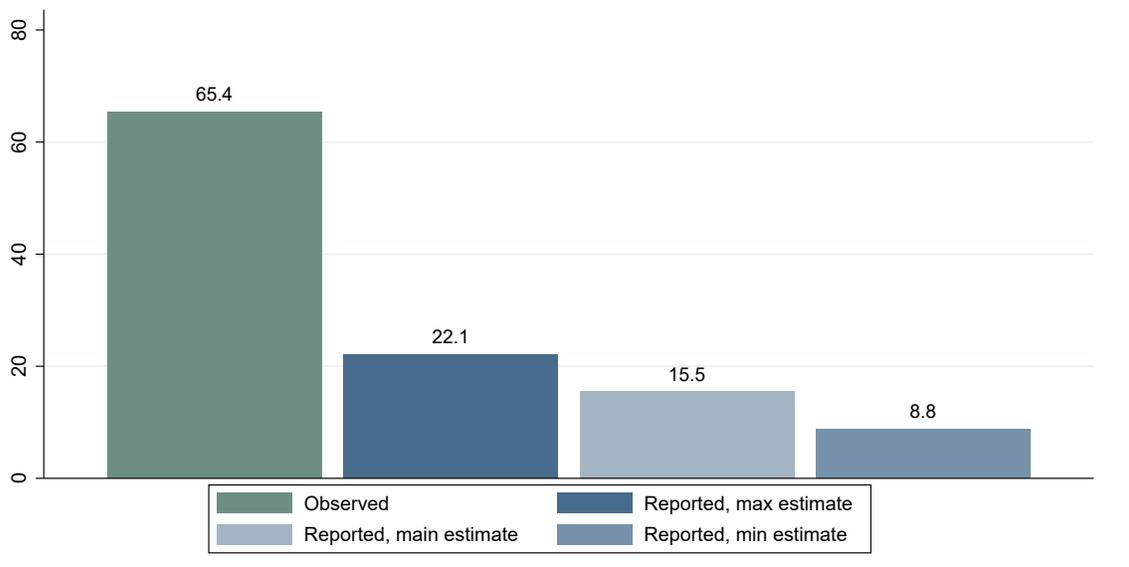
Notes: This figure compares United Arab Emirates real estate which is reported to the Norwegian tax authorities (no statistic is available for Dubai separately) and Dubai real estate owned by Norwegians in our data. The numbers for real estate reported to tax authorities from the Norwegian 2019 tax records, which capture wealth as of 31 December 2019. Panel A) shows the number of properties. Panel B) shows the observed and reported real estate values of owners who are tax residents in Norway. We only observe reported values after an unobserved discount to market values is applied, which depends on usage. The maximum estimate assumes that all properties are reported as non-commercial holiday homes (which implies a discount of 70 %). The minimum estimate assumes that all properties are reported as rented out or commercial properties (which implies a discount of 25 %). The main estimate assumes a 50-50 split between the two types of properties. The values in panel B) are in USD millions.

Table 1: Summary Statistics: All Properties

| | Percentiles, median and mean | | | | | |
	Min	25th	Median	Mean	75th	Max
Value (USD)	12,081	104,984	212,081	603,015	473,216	2,299,693,824
Size (m^2)	7.4	43.4	81.7	241.0	161.1	435,119
Price per m^2	790	2,028	2,366	2,654	3,158	5,671
# of bedrooms	1	1	1	1.67	2	10
Observations				883,268		

Notes: This table present summary statistics for key property characteristics and values for Dubai properties in our data after cleaning. An observation is a property or an ownership share in a property.

Table 2: Summary Statistics by Type of Property

Type	Number of properties	Mean value (USD)	Mean size (m^2)
Apartment	674,619	453,907	187
Villa	58,859	951,127	386
Building	4,114	4,153,415	1,524
Commercial	40,821	3,002,931	1,166
Hotel	992	338,352	90
Hotel Apartment	24,746	209,036	61
Hotel Rooms	7,607	154,202	41
Labor Camp	702	3,761,071	1,558
Office	46,047	305,833	101
Shop	24,425	297,199	99
Store	239	147,158	85

Notes: This table present summary statistics for the different types of properties for the sample after cleaning. An observation is a property or an ownership share in a property with non-missing information on property type.

Table 3: Gravity Model of Property Investments in Dubai

	Log real estate wealth in Dubai		Log number of properties in Dubai	
	(1)	(2)	(3)	(4)
Tax Haven	0.378		0.273	
	(0.635)		(0.507)	
Log(Swiss deposits)	0.283*	0.171**	0.310***	0.194***
	(0.144)	(0.074)	(0.112)	(0.066)
Log(Distance)	−1.726***	−1.680***	−1.503***	−1.457***
	(0.458)	(0.399)	(0.423)	(0.369)
Share border	−1.907*	−2.057***	−1.879**	−1.985***
	(0.971)	(0.776)	(0.892)	(0.727)
Log(GDP)	0.493***	0.785***	0.516***	0.781***
	(0.128)	(0.107)	(0.112)	(0.101)
Log(GDP/capita)	−0.084	−0.184*	−0.179	−0.261***
	(0.132)	(0.098)	(0.109)	(0.081)
Common language	1.182***	1.332***	1.158***	1.281***
	(0.378)	(0.335)	(0.383)	(0.354)
Time zone difference	0.054	−0.062	−0.002	−0.120
	(0.104)	(0.096)	(0.093)	(0.086)
Tax treaty	0.310	0.432	0.080	0.229
	(0.313)	(0.300)	(0.267)	(0.253)
Obs	172	138	172	138
R^2	0.620	0.760	0.678	0.796
Sample	All	Non-havens	All	Non-havens

Notes: Columns (1) and (2) report estimates from OLS regressions of the log of the total value of properties held in Dubai (in billions USD). Columns (3) and (4) report estimates from OLS regressions of the log of the total number of properties held in Dubai (in thousands). The tax haven list is reported in the appendix. Swiss deposits are for the year 2019 and taken from the publicly available Bank for International Settlements bilateral Locational Banking Statistics, series "Liabilities, of which deposits", all currencies. Distance (between most populated cities, denoted in million kilometers), share border indicator and common language (1 if a language is spoken by at least 9 % of the population in both countries) variables are retrieved from the GeoDist database published by CEPII. GDP and population statistics are retrieved from the World Bank. Time differences are taken with respect to the capital cities. Tax treaties is an indicator variable equal to one if the country/territory had a double-taxation agreement implemented before 2020 according to the UAE, Ministry of Finance. Robust standard errors are reported in parentheses. */**/*** indicates significance at the 10/5/1% levels respectively.

Appendix (for Online Publication)

A Properties Owned by Firms

Table A1 breaks down the total real estate values between properties registered with individuals and corporations. Firms in our sample are identified by running an algorithm that looks for common terms and abbreviations like "Holding" and "S.A.R.L" among observations that do not have a passport number, followed by extensive manual cleaning.

The list of common terms and abbreviations has been established after a thorough exploration of the data and contains the following words: "CO.", "L.L.C", "P.J.S.C", "K.S.C", "L L C", "INC.", "LTD", "COMPANY", "LIMITE", "CORP", "LLC", "BANK", " INC", "ESTATE", "PJSC", "CENTER", "SOCIETY", "GROUP", "DUBAI", "OFFICE", "PROPERTIES", "P J S C", "FOUNDATION", "RESIDENCES", "FZC", "FZE", "EMIRATES", "W.L.L", "INVESTMENT", "&", "LT D", "P S C", "L.LC", "CENTRE", "SERVICES", "DEVELOPMENT", "INTERNATIONAL", "TRADING", "S P A", "PROPERTY", "EST.", "DEVELOPERS"," EST", "INDUSTRY", "INDUSTRIES", "INVEST", "ESTABLISHMENT", " APS", "CAPITAL", "PSC", "DEVELOPER", "P.S.C", "PSC", "CLUB", "LIMITDE", "MANAGEMENT", "L.C.C", "S.A.L", "MANAGMENT", "TOWER", "S.R.L", "BSCC", "LABORATORY", "ASSOCIATION", "HOLDING", "TRADIN", "STORE", "AND SONS", "BRANCH", " S.A", "A.G.", "LIMTIED", "FACTORY", "ASSOCIATE", "LIMTED", "BUILDERS", "S.P.A", "TECHNOLOG", "F.Z.E", "TRUST", " AND ", "VENTURE", "F.Z.C", "L.L.C", "HOTEL", "P.J.C".

We then proceed to an extensive manual cleaning to make sure we do not include persons with those keywords.

Table A1: Ownership divided between firms and individuals

Panel A: Total values (USD)

	Personal	Corporate	Total
UAE	95 billion	192 billion	287 billion
Foreign	137 billion	9 billion	146 billion
Unknown	7 billion	92 billion	99 billion
Total	239 billion	293 billion	533 billion

Panel B: Unique properties

	Personal	Corporate	Total
UAE	183,940	243,598	427,538
Foreign	361,171	13,208	374,379
Unknown	19,965	61,289	81,254
Total	565,076	318,095	883,171

Panel C: Unique owners

	Personal	Corporate	Total
UAE	61,250	1,961	63,211
Foreign	190,344	721	191,065
Unknown	14,259	5,335	19,594
Total	265,853	8,017	273,870

Notes: This table presents an overview of how ownership of Dubai real estate is divided between individuals and firms.

B Algorithm to Assign Nationality

B.1 Country of Owners: Individuals

For more than 90% of the properties owned by individuals, nationality can be directly identified in the raw data. If nationality is missing, we impute it using information in the data on passport number, phone number, email address, and address of the owner, as well as public sources. Specifically, we use information in the raw data with the following order of priority:

1. Passport information,

2. Country of residence indicated in the raw data,

3. Contact information of the owner, in order:

    (a) mobile phone,

    (b) phone,

    (c) fax,

    (d) email,

    (e) address.

When country is still missing at the end of this process, we use data from the ICIJ offshore leaks database, which provide information on the country of the owners of shell companies. These data come from the following leaks: Offshore Leaks (2013), Panama Papers (2016), Bahamas Leaks (2016), Paradise Papers (2017), Pandora Papers (2021). To match names in the different databases, we extract the name variable and delete characters and spaces that could lead to misspellings. This trimming standardises the names between the two databases. For the ICIJ dataset, we create a unique ID for the different persons/entities based on name and jurisdiction. (In the very small number of cases where there are multiple countries assigned in the ICIJ data for a single owner in the Dubai data, we expand the observations in the data so that we can assign the different countries but divide the area owned in proportion.) We can match 2,318 names in the Dubai data with names in the ICIJ data.

B.2 Country of Owner: Firms

Our guiding principle is to try to identify the nationality of the beneficial owners of the firms who are identified as owners. To do so, we follow the same steps as for the identification of the country background of persons (minus step 1, since firms do not have passport information). We also proceed to a matching with the data from the ICIJ dataset using the name of the firms and a similar trimming process as for individuals. This allows us to assign 1,886 properties to an owner's country. In the ICIJ data, a shell company can be associated to three types of actors: officer, intermediary, and offshore entity:

1. Officer: A person or company who plays a role in an offshore entity

2. Intermediary: A go-between for someone seeking an offshore corporation and an offshore service provider — usually a law firm, a bank or a middleman that asks an offshore service provider to create an offshore firm for a client.

3. Offshore Entity: A company, trust or fund created by an agent in a low-tax jurisdiction that often attracts non-resident clients through preferential tax treatment.

We first assign firms to officers, then to intermediaries, then to offshore entities. For any firm with still more than one country listed for the owner (i.e., with several matches from the same imputation rank), we exclude the following jurisdictions due to their status as providers of secrecy and shell companies: *UAE (if there is another country listed); Anguilla; Aruba; Bahamas; Barbados; Belize; Bermuda; British Virgin Islands; Cayman Islands; Cook Islands; Cyprus; Gibraltar; Guernsey; Hong Kong; Isle of Man; Jersey; Liechtenstein; Macao; Malta; Monaco; Niue; Panama; Seychelles; Singapore; Tanzania; Turks and Caicos Islands; U.S. Virgin Islands.*

Finally, if there are still multiple countries for a given owner (for instance a firm with several shareholders from different countries), we expand the observations in the data to assign those different countries, but divide the area owned in proportion.

B.3 Manual Assignment of Country: Firms

In addition to the process described above, we pay special attention to the largest firms that is still not assigned a country background. This effort covers the 783 largest firms measured by number of properties owned and the market value of these firms (i.e., the 581 firms that own the most properties in Dubai and the 580 firms with the highest estimated total market value of properties in Dubai, of which there is an overlap of 380 firms).

We manually check the nationality of these firms if no country was assigned to them after exploiting the information available in the data and in ICIJ leaks.

The manual assignment used the databases listed below. On those databases we consider an owner to be identified if the information provided matches the name and at least one other information on the firm or owner in the raw data (e.g., email, phone, fax, address). United Arab Emirates focused registries (Dubai Yellow Pages; UAE Business Directory; Dubai Property Search), The UK Companies House registry, Social media (Facebook; LinkedIn), Offshore leak online database – when the previous step did not provide an exact matching –, International and regional registries (Zawya; ClarifiedBy; Bloomberg) , Other sources (Company websites; News articles).

Still, 19 percent of the real estate values that has no country background

C   Affluent Neighborhoods

This Appendix presents statistics on Dubai real estate ownership restricting to the most affluent neighborhoods. We consider a broad and a narrower definition of affluent neighborhoods, following classifications established by journalists with expertise on the Dubai property market:

- Broad definition: Al Barari, Dubai Marina, Palm Jumeirah, Emirates Hills, Springs, Jumeirah Village Triangle, Jumeirah Islands, and Lakes, Burj Khalifa, Arabian Ranches, City Walk, Dubai Health Care City, Dubai Industrial City, Dubai International Academic City, Dubai Life Style City, The Street Of Dreams, Falcon City, Festival City, Garden View, Jebel Ali Village, Jumeirah Golf, Jumeirah Park, Jumeriah Beach Residence, Meadows, Mudon, Palm Deira, Palm Jebel Ali, Barsha Heights, The Lagoons, The Palmarosa, The Villa.

- Narrower definition: Al Barari, Dubai Marina, Palm Jumeirah, Emirates Hills, Springs, Burj Khalifa.

Figure A1: Value of Real Estate in Affluent Areas (Broad Definition) in Dubai in 2020
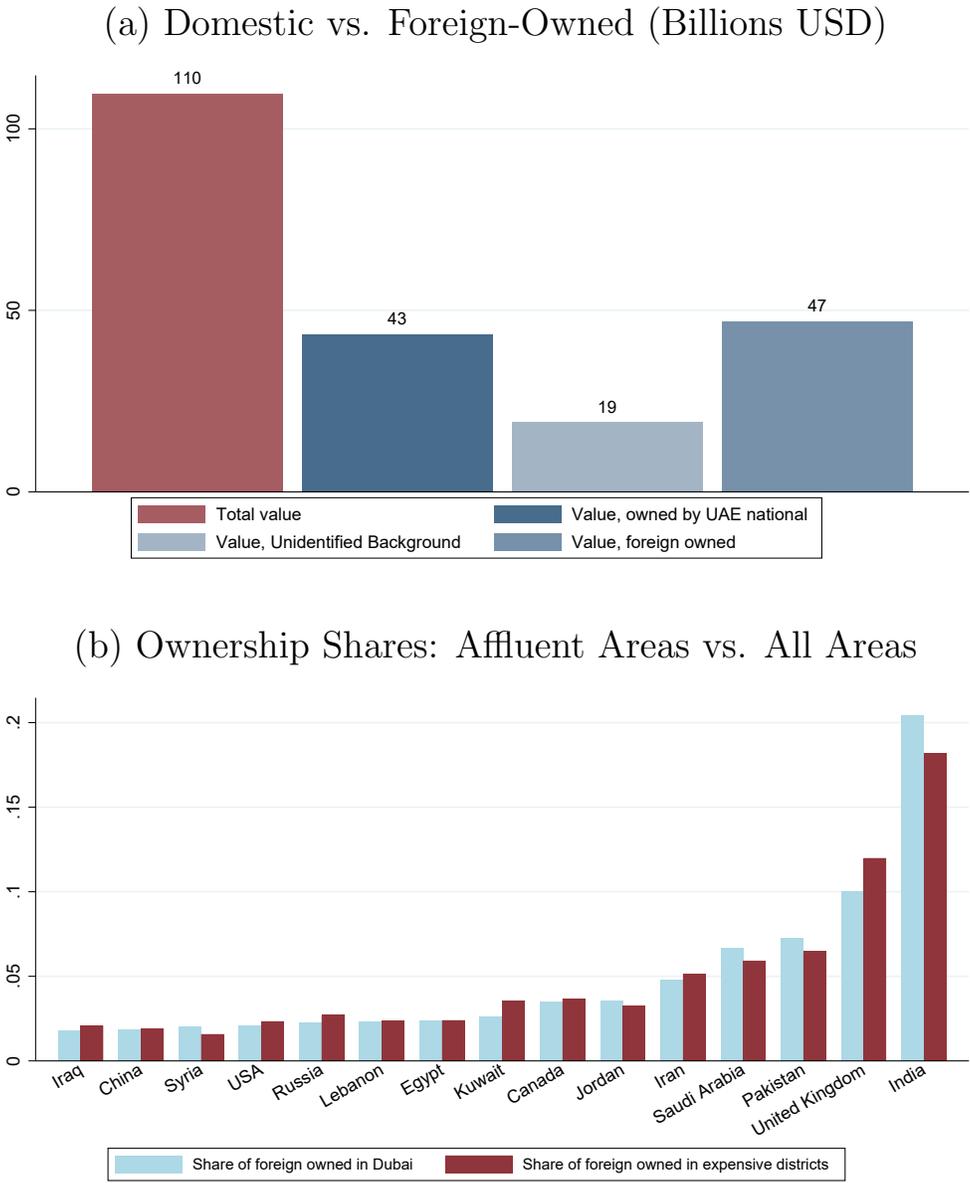
(a) Domestic vs. Foreign-Owned (Billions USD)

(b) Ownership Shares: Affluent Areas vs. All Areas

Notes: Panel A) shows the total value of real estate market in the most affluent districts in Dubai, using a broader definition. It shows the total value and the total value over whether it is domestically owned, foreign owned or owned by an owner with uncertain country background. Values are USD billions. Panel B) compares the ownership share of offshore real estate by the top 20 countries in the most affluent areas (broad definition) and in Dubai overall. The broad definition of affluent areas includes Al Barari, Dubai Marina, Palm Jumeirah, Emirates Hills, Springs, Jumeirah Village Triangle, Jumeirah Islands, and Lakes, Burj Khalifa, Arabian Ranches, City Walk, Dubai Health Care City, Dubai Industrial City, Dubai International Academic City, Dubai Life Style City, The Street Of Dreams, Falcon City, Festival City, Garden View, Jebel Ali Village, Jumeirah Golf, Jumeirah Park, Jumeriah Beach Residence, Meadows, Mudon, Palm Deira, Palm Jebel Ali, Barsha Heights, The Lagoons, The Palmarosa, The Villa.

Figure A2: Value of Real Estate in Affluent Areas (Narrower Definition) in Dubai in 2020
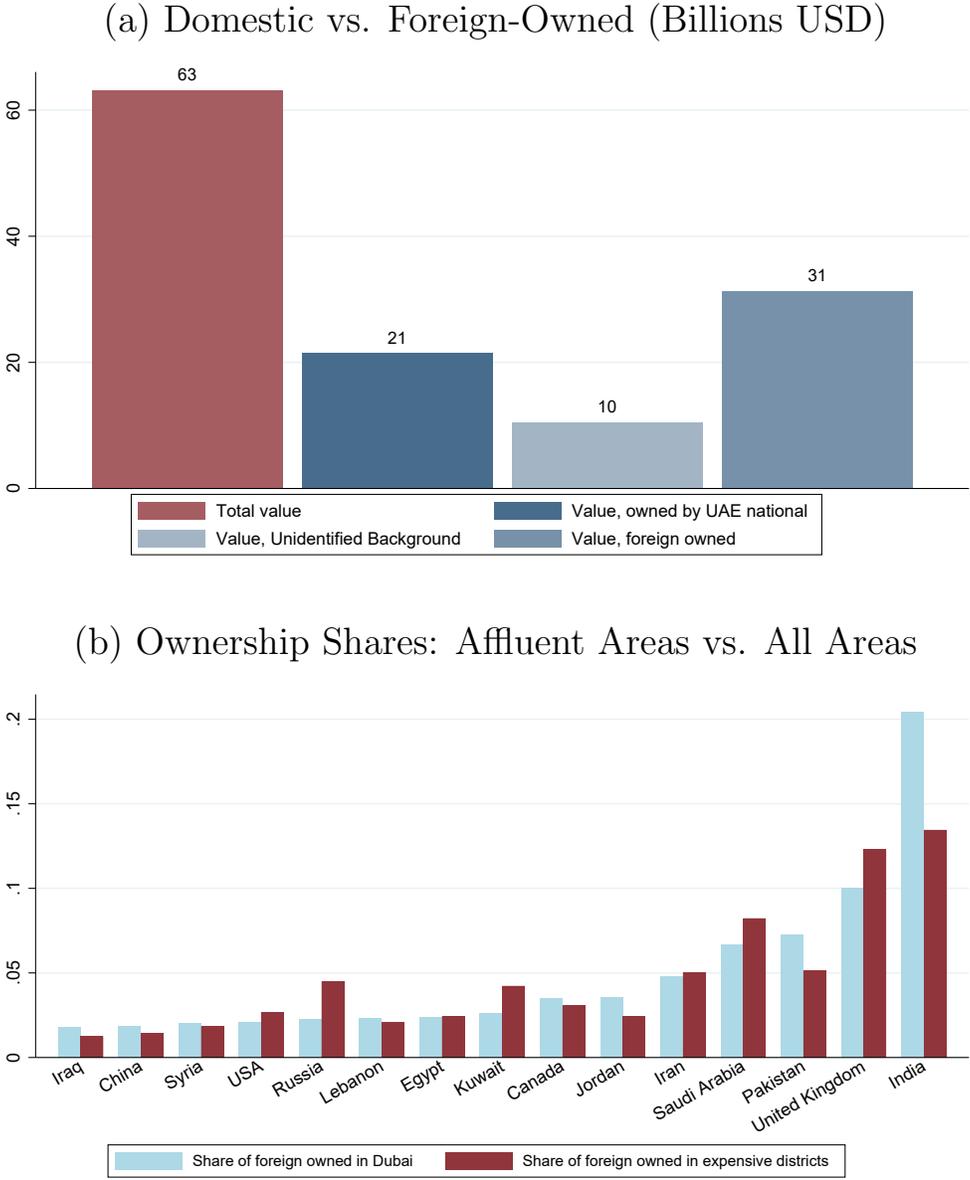
(a) Domestic vs. Foreign-Owned (Billions USD)

(b) Ownership Shares: Affluent Areas vs. All Areas

Notes: Panel A) shows the total value of real estate market in the most affluent districts in Dubai, using a narrow definition of affluent districts. It shows the total value and the total value over whether it is domestically owned, foreign owned or owned by an owner with uncertain country background. Values are USD billions. Panel B) compares the ownership share of offshore real estate by the top 20 countries in the most affluent areas (narrow definition) vs. Dubai overall. The narrow definition of affluent areas includes Al Barari, Dubai Marina, Palm Jumeirah, Emirates Hills, Springs, Burj Khalifa.

D Tax havens and Citizenship by Investment Countries

List of tax havens. Our list of tax havens is taken from Bomare and Le Guern Herry (2022), with the following modifications. We exclude Austria, Ireland, the Netherlands, and Belgium for the purpose of this paper, as they are also populous European economies. We also exclude Lebanon and Jordan, which are countries with strong ties to the UAE and with sizable population. There are no observations in our data for Anguilla, Aruba, Marshall Islands, Montserrat, Nauru, Netherlands Antilles, Niue, Tonga, Sint Maarten, Virgin Islands (US). The final list we use is: Antigua & Barbuda, Bahamas, Barbados, British Virgin Islands, Cayman Islands, Dominica, Grenada, Saint Kitts And Nevis, Saint Lucia, Saint Vincent & The Grenadines, Turks And Caicos Islands, Belize, Costa Rica, Panama, Hong Kong, Macao, Singapore, Andorra, Guernsey, Jersey, Cyprus, Gibraltar, Isle Of Man, Liechtenstein, Luxembourg, Malta, Monaco, San Marino, Switzerland, Maldives, Mauritius, Seychelles, Bahrain, Bermuda, Cook Islands, Samoa, Vanuatu, Liberia, Malaysia, Chile, Trinidad & Tobago, Uruguay

List of citizenship-by-investment countries. Our list of Citizenship by investment countries and territories is taken from the OECD to which we add Comoros Islands (which had an extensive scheme between 2001 and 2018), Montenegro (which has a limited program), and Turkey, following Langenmayr and Zyska (2021). The final list includes: Antigua & Barbuda, Comoros Islands, Cyprus, Dominica, Grenada, Malta, Montenegro, Saint Kitts and Nevis, Saint Lucia, Seychelles, Turkey, Turks and Caicos Islands, Vanuatu.

E Detailed Country-by-Country Results

Table A2: Detailed Country Results – I

Country	Number of owners	Number of properties	GDP (in USD billions)	Total value (in USD millions)	Total value (in % of GDP)	Mean property value(in USD)	Median property value(in USD)
World	273,871	883,268	86,270	532,565	0.62%	603,015	212,081
Afghanistan	1,134	3,220	18	1,410	7.81%	437,897	252,006
Albania	17	19	15	7	0.04%	355,924	325,745
Algeria	790	1,539	175	450	0.26%	292,405	196,108
American Samoa	Less than five	9	1	10	1.58%	1,120,303	844,572
Andorra	Less than five	Less than five	3	0	0.01%	Anonymized	Anonymized
Angola	35	113	101	27	0.03%	240,675	222,856
Antigua & Barbuda	14	35	2	125	7.81%	3,584,639	573,702
Argentina	90	147	525	51	0.01%	348,682	217,929
Armenia	180	296	12	208	1.67%	701,521	242,296
Australia	1,806	2,809	1,429	1,198	0.08%	426,313	273,738
Austria	371	687	455	402	0.09%	585,009	320,988
Azerbaijan	575	1,583	47	741	1.57%	468,257	256,385
Bahamas	64	826	13	305	2.37%	369,108	244,748
Bahrain	1,059	3,042	38	1,426	3.77%	468,921	266,635
Bangladesh	459	972	274	315	0.11%	323,851	188,927
Barbados	5	18	5	9	0.18%	517,493	325,854
Belarus	137	228	60	65	0.11%	283,601	184,791
Belgium	745	1,511	543	593	0.11%	392,468	216,335
Belize	21	42	2	25	1.32%	601,917	378,304
Benin	10	17	14	5	0.03%	283,675	285,951
Bermuda	Less than five	45	7	20	0.27%	440,718	132,736
Bhutan	11	12	2	5	0.19%	381,938	445,504
Bolivia	5	5	40	1	0%	206,678	98,122
Bosnia And Herzegovina	68	105	20	27	0.13%	255,222	185,587
Botswana	26	36	17	12	0.07%	344,574	271,641
Brazil	253	323	1,917	138	0.01%	425,998	307,472
British Virgin Islands	45	912	1	384	38.36%	420,573	246,430
Brunei	13	17	14	4	0.03%	220,982	211,154
Bulgaria	247	384	66	143	0.22%	373,337	216,002
Burkina Faso	6	10	16	2	0.01%	218,958	145,321
Burundi	16	27	3	7	0.25%	244,083	118,806
Cambodia	Less than five	Less than five	25	0	0%	Anonymized	Anonymized
Cameroon	47	65	40	17	0.04%	264,531	155,370
Canada	5,694	11,360	1,725	5,150	0.3%	453,364	239,122
Cayman Islands	6	1,142	6	565	10.24%	495,087	330,130
Central African Republic	7	7	2	1	0.04%	118,084	98,881
Chad	11	22	11	14	0.13%	640,978	509,215
Chile	27	47	298	23	0.01%	499,295	369,027
China	5,179	9,018	13,890	2,735	0.02%	303,295	191,596
Colombia	78	96	334	36	0.01%	374,693	288,962
Comoros Islands	166	253	1	96	8.07%	379,461	199,552
Congo, Republic Of	17	30	14	13	0.09%	431,906	221,947
Cook Islands	Less than five	Less than five	1	1	0.13%	Anonymized	Anonymized
Costa Rica	5	6	62	1	0%	126,384	141,630
Croatia	94	125	62	43	0.07%	344,207	233,595
Cuba	Less than five	Less than five	100	1	0%	Anonymized	Anonymized
Cyprus	121	238	26	349	1.37%	1,467,693	390,725
Czech Republic	158	224	249	89	0.04%	398,611	279,865
Democratic Rep, Of Congo	Less than five	Less than five	47	3	0.01%	Anonymized	Anonymized
Denmark	530	855	357	327	0.09%	382,371	247,832
Djibouti	39	49	3	22	0.72%	445,661	284,328
Dominica	58	196	1	101	18.32%	514,569	320,047
Dominican Republic	125	291	86	164	0.19%	563,314	326,994
Ecuador	9	12	108	5	0%	446,617	522,794
Egypt	6,202	9,484	250	3,442	1.38%	362,956	229,915
El Salvador	Less than five	Less than five	26	1	0%	Anonymized	Anonymized
Eritrea	83	192	2	94	4.53%	487,173	196,771
Estonia	33	43	30	11	0.04%	262,801	180,772
Eswatini	53	75	5	26	0.56%	348,572	289,361
Ethiopia	220	321	84	110	0.13%	341,321	218,954
Faroe Islands	Less than five	Less than five	3	0	0%	Anonymized	Anonymized
Fiji	Less than five	Less than five	6	3	0.06%	Anonymized	Anonymized
Finland	119	191	276	65	0.02%	340,802	267,176
Foreign Governmental Organisation	8	16	NA	35	NA	2,182,392	1,395,278
France	3,256	4,924	2,790	1,959	0.07%	397,872	244,677

Table A3: Detailed Country Results – II

Country	Number of owners	Number of properties	GDP (in USD billions)	Total value (in USD millions)	Total value (in % of GDP)	Mean property value(in USD)	Median property value(in USD)
Gabon	10	24	17	11	0.07%	475,132	323,586
Gambia	Less than five	13	2	4	0.23%	299,071	302,579
Georgia	20	29	18	14	0.08%	469,340	260,700
Germany	2,109	4,447	3,975	1,801	0.05%	405,029	218,138
Ghana	107	175	67	51	0.08%	291,381	113,958
Gibraltar	Less than five	132	3	127	4.24%	963,410	824,188
Greece	517	1,007	212	327	0.15%	324,493	179,620
Grenada	13	39	1	19	1.6%	478,581	320,135
Guatemala	Less than five	Less than five	73	1	0%	Anonymized	Anonymized
Guernsey	8	19	4	12	0.3%	637,698	483,758
Guinea	9	17	12	13	0.11%	784,763	319,283
Guinea-Bissau	5	7	2	3	0.17%	362,315	182,523
Guyana	Less than five	Less than five	5	2	0.04%	Anonymized	Anonymized
Honduras	Less than five	Less than five	24	1	0%	Anonymized	Anonymized
Hong Kong	72	186	362	65	0.02%	347,828	202,255
Hungary	179	277	161	89	0.06%	321,812	214,398
Iceland	8	8	26	4	0.02%	504,291	495,347
India	34,876	68,759	2,701	29,826	1.1%	433,774	212,846
Indonesia	97	271	1,042	85	0.01%	314,238	179,886
Iran	8,669	16,703	294	7,029	2.39%	420,807	222,273
Iraq	2,721	5,383	227	2,593	1.14%	481,788	247,570
Ireland	1,871	2,647	385	882	0.23%	333,080	185,193
Isle Of Man	Less than five	Less than five	7	1	0.02%	Anonymized	Anonymized
Italy	2,407	3,700	2,091	1,130	0.05%	305,472	209,960
Ivory Coast	21	34	58	9	0.01%	252,743	151,226
Jamaica	16	17	16	5	0.03%	285,214	245,182
Japan	186	357	5,037	137	0%	382,704	270,920
Jersey	7	18	6	19	0.34%	1,042,778	472,430
Jordan	5,555	13,195	43	5,198	12.11%	393,913	188,578
Kazakhstan	1,550	2,694	179	1,018	0.57%	377,989	231,468
Kenya	762	1,393	92	399	0.43%	286,496	151,198
Kosovo	Less than five	Less than five	8	1	0.01%	Anonymized	Anonymized
Kuwait	3,444	8,103	138	3,796	2.75%	468,442	181,851
Kyrgistan	106	236	8	102	1.24%	433,082	275,105
Latvia	96	170	34	66	0.19%	385,450	221,789
Lebanon	4,495	7,541	55	3,399	6.15%	450,677	259,953
Lesotho	6	7	3	2	0.08%	298,193	197,084
Liberia	Less than five	7	3	2	0.06%	271,216	187,711
Libya	402	1,086	53	541	1.03%	498,019	261,379
Liechtenstein	Less than five	14	7	4	0.06%	273,314	180,004
Lithuania	104	144	54	36	0.07%	253,430	209,342
Luxembourg	45	72	71	28	0.04%	386,165	275,078
Macao	Less than five	Less than five	55	0	0%	Anonymized	Anonymized
Macedonia	45	55	13	14	0.11%	258,294	195,301
Madagascar	38	42	14	7	0.05%	170,831	86,501
Malawi	29	84	10	18	0.18%	217,377	151,888
Malaysia	389	609	359	218	0.06%	358,598	234,270
Maldives	17	27	5	12	0.23%	449,154	269,973
Mali	13	21	17	10	0.06%	491,360	486,601
Malta	111	471	15	253	1.7%	536,966	272,010
Mauritania	24	28	7	9	0.12%	327,727	219,435
Mauritius	102	149	14	46	0.33%	310,487	185,041
Mexico	90	140	1,222	67	0.01%	477,754	395,806
Moldova	39	55	11	14	0.13%	263,205	191,224
Monaco	Less than five	Less than five	7	2	0.02%	Anonymized	Anonymized
Mongolia	Less than five	7	13	1	0.01%	97,591	83,078
Montenegro	11	16	6	7	0.14%	466,896	244,065
Morocco	664	1,443	118	521	0.44%	361,226	200,530
Mozambique	67	359	15	78	0.53%	218,510	134,717
Myanmar	18	19	67	4	0.01%	227,737	177,607
Namibia	Less than five	10	14	2	0.02%	212,952	106,549
Nepal	83	137	33	223	0.67%	1,627,542	205,319
Netherlands	1,051	1,721	914	766	0.08%	444,940	309,630
New Zealand	470	642	212	260	0.12%	405,101	258,345
Nicaragua	Less than five	Less than five	13	1	0.01%	Anonymized	Anonymized
Niger	28	46	13	20	0.16%	441,603	336,418

Table A4: Detailed Country Results – III

Country	Number of owners	Number of properties	GDP (in USD billions)	Total value (in USD millions)	Total value (in % of GDP)	Mean property value(in USD)	Median property value(in USD)
Niger	28	46	13	20	0.16%	441,603	336,418
Nigeria	1,215	1,981	397	568	0.14%	286,911	156,097
North Korea	24	30	40	14	0.03%	458,064	401,826
Norway	262	363	437	122	0.03%	334,711	208,199
Oman	1,275	3,845	92	2,169	2.37%	564,006	176,306
Pakistan	19,662	38,907	315	10,632	3.38%	273,258	136,698
Palestine	1,252	2,788	16	888	5.45%	318,336	163,682
Panama	9	33	65	13	0.02%	396,535	295,339
Papua New Guinea	Less than five	Less than five	24	2	0.01%	Anonymized	Anonymized
Paraguay	Less than five	Less than five	40	1	0%	Anonymized	Anonymized
Peru	13	18	223	6	0%	318,151	210,692
Philippines	347	449	347	129	0.04%	287,965	166,167
Poland	300	459	587	154	0.03%	336,314	230,846
Portugal	351	819	242	238	0.1%	290,900	186,881
Puerto Rico	15	31	101	32	0.03%	1,017,179	791,651
Qatar	1,750	4,624	183	2,134	1.16%	461,598	262,423
Romania	317	459	242	219	0.09%	476,498	185,154
Russia	5,381	9,755	1,657	3,344	0.2%	342,802	213,468
Rwanda	27	100	10	23	0.24%	231,354	122,419
Saint Kitts & Nevis	441	2,060	1	1,519	140.8%	737,470	279,549
Saint Lucia	Less than five	Less than five	2	0	0.02%	Anonymized	Anonymized
Saint Vincent & The Grenadines	Less than five	Less than five	1	2	0.28%	Anonymized	Anonymized
Samoa	Less than five	77	1	16	1.91%	203,794	180,625
San Marino	Less than five	Less than five	2	1	0.08%	Anonymized	Anonymized
Saudi Arabia	9,875	23,725	786	9,782	1.24%	412,317	232,453
Senegal	27	59	23	40	0.17%	672,979	648,068
Serbia	237	287	51	74	0.15%	258,346	197,750
Seychelles	66	353	2	293	18.94%	830,749	618,288
Sierra Leone	13	68	4	26	0.64%	382,659	245,868
Singapore	603	1,045	376	560	0.15%	535,931	257,271
Slovakia	133	362	106	488	0.46%	1,346,765	243,081
Slovenia	46	56	54	26	0.05%	471,185	369,793
Somalia	39	56	6	13	0.22%	226,892	187,224
South Africa	1,444	2,337	405	739	0.18%	316,295	222,008
South Korea	323	473	1,725	192	0.01%	406,963	329,300
Southern Sudan	8	20	12	9	0.08%	452,166	454,346
Spain	527	695	1,420	274	0.02%	394,732	294,417
Sri Lanka	408	590	88	205	0.23%	348,252	219,445
Sudan	1,866	3,130	31	942	3.04%	300,806	183,245
Sweden	852	1,439	556	628	0.11%	436,623	222,236
Switzerland	682	1,049	736	519	0.07%	494,585	330,630
Syria	4,484	9,573	40	2,976	7.37%	310,895	167,268
Taiwan	31	74	590	47	0.01%	631,226	545,746
Tajikistan	110	342	8	122	1.57%	356,881	138,098
Tanzania	407	805	57	237	0.42%	294,556	186,251
Thailand	89	252	507	130	0.03%	516,837	443,851
Togo	Less than five	5	7	1	0.01%	113,998	111,946
Trinidad & Tobago	14	15	24	6	0.02%	368,281	238,159
Tunisia	431	655	43	224	0.53%	342,686	220,263
Turkey	974	1,589	778	720	0.09%	453,273	262,428
Turkmenistan	215	361	41	125	0.31%	345,139	258,081
Turks & Caicos Islands	Less than five	5	1	3	0.27%	598,739	649,319
USA	5,085	8,808	20,610	3,021	0.01%	342,952	209,824
Uganda	63	141	33	37	0.11%	265,642	162,622
Ukraine	621	961	131	324	0.25%	336,982	203,528
United Arab Emirates	63,438	427,538	422	287,246	68.04%	671,860	211,542
United Kingdom	23,136	40,129	2,901	14,673	0.51%	365,657	197,763
Unknown Background (Firm)	5,438	61,289	NA	92,316	NA	1,506,234	285,122
Unknown Background (Person)	14,403	19,965	NA	6,830	NA	342,078	190,274
Uruguay	11	18	65	4	0.01%	243,082	246,412
Uzbekistan	472	780	53	307	0.58%	393,352	243,717
Vanuatu	Less than five	Less than five	1	1	0.1%	Anonymized	Anonymized
Venezuela	77	104	482	45	0.01%	435,046	267,746
Vietnam	22	25	245	8	0%	316,428	320,063
Yemen	965	3,630	22	1,044	4.83%	287,468	162,415
Zambia	65	95	26	20	0.08%	207,861	168,948
Zimbabwe	83	127	18	38	0.21%	302,960	162,415