

# *Offshore Financial Centers: Parasites or Symbionts?*

**Andrew K. Rose**  
**U.C. Berkeley**

**And**

**Mark M. Spiegel**  
**Federal Reserve Bank of San Francisco**

**The views expressed are those of the authors and not necessarily those of the Federal Reserve Board of Governors or the Federal Reserve Bank of San Francisco**

Offshore financial centers (OFCs): Jurisdictions that oversee disproportionate non-resident financial activity.

We examine two questions:

1. Why do some countries become OFCs?
2. What are consequences of OFCs to their neighbors?

## Why do countries become OFCs?

- a. Literature: OFCS facilitate circumvention of source country regulations [e.g. Hampton and Christensen (2002)]
- b. In 2000, OECD identified 30 countries as engaging in harmful tax practices, and gave deadlines for avoidance of sanctions
  - 1. Most countries complied
  - 2. Countries still in violation as of 2004 included Andorra, Liberia, Liechtenstein, the Marshall Islands, and Monaco
- c. G7 has created task force against money laundering practices

## d. Bilateral Approach

1. Use bi-lateral CPIS data for year-end 2001 and 2002, data includes 69 source and 222 host countries
2. Gravity model specification
  - a. conventional gravity variables, including source and host country population, real GDP per capita, colonial history, geographic features, distance, common language, and common currency
  - b. Combination of 3 indicators on tax havens [OECD, CIA, and Hines and Rice (1994)].
  - c. Money laundering dummy from June 2000 OECD
  - d. variables that measure the rule of law, political stability, and regulatory quality

**Table 1: Bilateral Determinants of Cross-Border Asset Holdings (summary)**

	<b>Pooled</b>	<b>2001</b>	<b>2002</b>	<b>Pooled, without 0 values</b>	<b>Pooled, with institutions</b>	<b>Pooled, with institutions, legal regime</b>
Log Distance	-1.14 (.08)	-1.24 (.09)	-1.04 (.09)	-.49 (.05)	-1.23 (.08)	-1.13 (.08)
Tax Haven Host					1.19 (.24)	1.33 (.25)
Tax Haven Source					.70 (.20)	1.23 (.22)
Money Launder Host					2.06 (.24)	2.06 (.24)
Money Launder Source					.55 (.23)	.29 (.23)
Regulatory Quality, Host					2.19 (.15)	2.21 (.15)
Regulatory Quality, Source					-.50 (.23)	-.06 (.24)
Observations	12,220	6,364	5,856	6,063	12,220	12,220
R <sup>2</sup>	.56	.54	.57	.54	.60	.60

## Bilateral Results

- a. Host countries that are tax havens and/or money launderers are more likely to attract cross-holding
- b. Host countries with higher regulatory quality attract more assets
- c. Intuition is that loose regulatory restrictions facilitate activity not allowed in source countries, but need some enforcement of property rights to ensure that assets can be safely repatriated

## **e. Multilateral evidence on OFC Determination**

1. Cross-sectional probit

2. Identification of OFCs

a. Identified as financial center by either Financial Stability Forum, Errico and Musalem (1999), or IMF (2004)

b. host at least \$10 million in total assets

c. Not in OECD

d. Results in forty OFCs

## Offshore Financial Centers: Default Definition

Andorra	Aruba	Bahamas	Bahrain
Barbados	Belize	Bermuda	Brit. Virgin Islands
Caymans	Costa Rica	Cyprus	Dominica
Gibraltar	Guernsey	Hong Kong	Isle of Man
Israel	Jersey	Kuwait	Lebanon
Liberia	Liechtenstein	Macau	Malaysia
Malta	Marshalls	Mauritius	Monaco
Morocco	Neth. Antilles	Oman	Panama
Philippines	Russia	Singapore	St. Kitts & Nevis
Thailand	Turks&Caicos	U.A.E.	Uruguay



**Table 2: Multilateral Determinants of OFCs**

	(1)	(2)	(3)	(4)
Population	-.11 (.04)	.11 (.06)	.01 (.09)	.01 (.10)
GDP p/c	.44 (.11)	.39 (.13)	.35 (.30)	.49 (.31)
Tax Haven		1.34 (.36)	1.05 (.43)	.87 (.45)
Money Launderer		1.51 (.35)	1.87 (.48)	1.87 (.48)
Rule of Law			-.24 (.50)	-.39 (.52)
Political Stability			-.13 (.29)	-.07 (.31)
Regulatory Quality			.32 (.46)	.32 (.46)
Common Law				-.05 (.50)
Civil Law				-.94 (.60)
French Law				.60 (.44)
Observations	223	223	184	184
Pseudo-R <sup>2</sup>	.16	.42	.41	.44

### **3. Results**

- a. Being either a tax haven or a money launderer has an economically and statistically strong effect in raising the probability of being an OFC. (Confirms bilateral results)
- b. measures of institutional quality and the legal regime have no strong consistent effect on OFC determination.
- c. Results are robust to extensive sensitivity analysis
- d. Suggests that primary motivation for investors in moving assets offshore is circumvention of domestic tax laws or other illegal activities.

# Consequences of Offshore Financial Centers

## Theoretical Model of OFC Activity

1. Monopoly domestic financial sector and competitive set of OFC banks
2. Geography matters: Cost of moving assets to OFCs decreasing in distance to OFC
3. Find that proximity to OFCs makes home country financial sectors more competitive and increases home country financial depth

## **Empirical evidence on impact of OFCs on their Neighbors**

A. Examine theory predictions that home country profits are declining and that overall lending is increasing in OFC proximity

1. Use multilateral data from above
2. Proximity is measured as distance to nearest OFC
3. Add a number of conditioning variables
4. Estimate using OLS, with standard errors robust to heteroskedasticity.

## C. Impact of OFC proximity on domestic banking competitiveness

### 1. 3 measures of the degree of competitiveness

- a. interest rate spread charged by commercial banks
- b. concentration of domestic banking, share of top 5 banks
- c. number of banks divided by the log of domestic GDP

### 2. Coefficient of interest to us is effect of OFC proximity on domestic banking competitiveness

**Table 3a: OFC Proximity & Domestic Banking Competitiveness**

<b>Measure</b>	<b>Bivariate</b>	<b>Controls #1</b>	<b>Controls #2</b>	<b>Controls #3</b>	<b>IV</b>
<b>Loan-Deposit Interest Spread</b>	2.21 (.62)	1.45 (.69)	1.41 (.70)	1.63 (.79)	1.44 (.92)
<b>5-bank Concent. Ratio</b>	1.77 (1.75)	4.66 (1.38)	7.53 (1.79)	6.91 (1.98)	8.22 (2.86)
<b># Comm. Banks /ln GDP</b>	-.67 (.68)	-.99 (.78)	-1.16 (.65)	-1.52 (.81)	-1.49 (.89)

Coefficients recorded are for log distance to closest OFC.

Controls #1: OFC dummy; log (2001-02 average) population; log (2001-02 average) real GDP per capita; intercept.

Controls #2: controls #1 plus trade remoteness; civil law dummy; French law dummy; landlocked dummy; latitude in hours; % Christian; % Muslim.

Controls #3: controls #2 plus (2001-02 average) trade as a percentage of GDP.

IV: controls #3. IVs for log minimum distance to OFC include: 1) log minimum distance to tax haven; 2) log minimum distance to money launderer; 3) remoteness from OFCs.

OLS estimation unless labeled; robust standard errors recorded in parentheses.

## **C. Summary of results**

1. OFC remoteness associated with an increase in monopoly power at statistically and economically significant levels.
  - a. Point estimates suggest that a one standard deviation increase in distance to an OFC is associated with an increase of 1.41 to 2.21 percent in the interest rate spread and an increase of 1.77 to 8.22 percent in the share of the banking industry controlled by the five largest commercial banks.
  - b. These results are statistically significant at standard significance levels for all three specifications.

## 4. Impact on depth of domestic financial intermediation

A. Use 3 measures of intermediation common in literature

1. ratio of credit to the private sector as a percentage of GDP
2. ratio of quasi-liquid liabilities to GDP
3. ratio of M2 to GDP

B. Coefficient of interest,  $\beta$ , expected to be consistently negative, since OFC proximity should increase domestic financial intermediation.



**Table 3b: OFC Proximity and Financial Depth**

<b>Measure (% GDP)</b>	<b>Bivariate</b>	<b>Controls #1</b>	<b>Controls #2</b>	<b>Controls #3</b>	<b>IV</b>
<b>Dom. Private Sector Credit</b>	-13.7 (3.6)	-1.9 (3.0)	-3.1 (2.9)	-4.1 (3.1)	-3.4 (3.4)
<b>Quasi-Liquid Liability</b>	-16.3 (4.2)	-8.9 (3.3)	-11.4 (3.6)	-11.6 (3.4)	-7.8 (3.2)
<b>M2</b>	-17.1 (4.1)	-9.7 (3.4)	-11.1 (4.0)	-11.5 (3.8)	-5.3 (3.7)

Coefficients recorded are for log distance to closest OFC.

Controls #1: OFC dummy; log (2001-02 average) population; log (2001-02 average) real GDP per capita; intercept.

Controls #2: controls #1 plus trade remoteness; civil law dummy; French law dummy; landlocked dummy; latitude in hours; % Christian; % Muslim.

Controls #3: controls #2 plus (2001-02 average) trade as a percentage of GDP.

IV: controls #3. IVs for log minimum distance to OFC include: 1) log minimum distance to tax haven; 2) log minimum distance to money launderer; 3) remoteness from OFCs.

OLS estimation unless labeled; robust standard errors recorded in parentheses.

## **C. Summary of results**

1. Distance to the closest OFC affects financial intermediation with a consistently negative sign
2. Significant for two of our three proxies, the ratios of quasi-liquid liabilities to GDP and M2 to GDP, but insignificant effect on credit to the private sector as a percentage of GDP
3. Point estimates indicate that proximity to an OFC is consistently of economic significance

## 4. Conclusion

- A. Examine determinants of OFC and consequences for neighbors
- B. Successful OFCs appear to encourage bad behavior in source countries, since they facilitate tax evasion and money laundering, favoring “parasite” characterization
- C. But OFCs may also have unintended positive consequences, such as enhancing local banking sector competitiveness
- D. We find that OFC proximity is associated with a more competitive domestic banking sector, and greater financial intermediation.
- E. Tentatively: OFCs are better characterized as “symbionts”