

– A Review –

International Financial Services: Location Preferences and Economies

By George M. von Furstenberg*, Bloomington/USA

I. Introduction

International financial services (IFS) are big business not just for some very small but functional offshore financial centers (OFCs).¹ *Kaufman* ((2001), p. 366) cites an estimate of 7% of 1998 British GDP being generated within one square mile of what is known as “the city” by 1 million employees, indirect employment included.² The percentages for Hong Kong and Singapore were comparable, that for Shanghai smaller.³ Still there are several countries and cities of appreciable size for whom supplying international financial services is one of their most important, and

* The views expressed are those of the author and not of the U.S. Government or the National Science Foundation where this paper was written while the author was a Program Director for Economics 2006–08. Since then the author has been J. H. Rudy Professor of Economics emeritus at Indiana University.

¹ Throughout we are not concerned with OFCs that are merely booking centers. Such centers provide a legal place of record for transactions that actually take place elsewhere. The heterogeneity of offshore jurisdictions by stage of financial development is obvious from the composition of the Offshore Group of Banking Supervisors: Hong Kong and Singapore are members as are Labuan, Mauritius, and Vanuatu (see *BIS* (2006), p. 61). *Jao* (2003) provides a comprehensive typology of financial centers. Unlike OFCs, IFSCs tend to be fully (Hong Kong, Panama) or largely integrated with the domestic financial systems and accessible to its clients.

² *McKinsey & Co.* ((2007), pp. 10, 15) contains an estimate of 318,000 for London’s financial services workforce, and 328,400 for New York’s in 2005. It cites an estimate suggesting that every “securities” job accounts for two additional jobs in other industries. Applying a multiplier of 3 to “securities” jobs would lead back to the earlier estimate of an employment effect in London of about 1 million.

³ *Zhao/Li/Wang* ((2004), p. 587) report that only 2.25 percent of Shanghai’s total employment (but presumably a larger percentage of value added) was in the FIRE sector in 2000. This percentage does not include employment in government agencies associated with foreign exchange administration and trading, banking supervision, etc.

often subsidized, businesses. Along the coasts of Asia⁴ and the Persian Gulf, rapidly developing countries, large and small, now appear bent on growing their own International Financial Service Centers (IFSCs). Established centers, in turn, worry about maintaining their edge.⁵

This paper outlines some of the economic benefits and fiscal and other costs of attracting the high-value lines of the international financial services business to a particular location (Section II). Keeping them in place requires macroeconomic stability (Section III) and maintaining an internationally competitive level of technical and allocative efficiency of operations and of risk management (Section IV) with the cost-saving infrastructure and local amenities provided. This infrastructure may relate not only to operational assets such as communications, automated trading platforms, and international accessibility, but also to characteristics of the macroeconomic system and the quality of governance, industry institutions, and regulatory oversight. Sections III and IV then point out that the macro-level contributions of IFSCs to global and domestic stability may be mixed. Furthermore, inferences drawn from the results of micro-level efficiency studies of financial service providers have not been consistent with these providers' actual survival pattern. There must also be a fuller accounting of the range of risks associated with returns, and of who bears any subsequent losses, if gains and losses are to be attributed to the appropriate originating and managing parties, or to other parties, including those responsible for prudential regulation and oversight. Section V sketches how developments in ICT that affect the operation of capital markets and the need for relationship banking and finance may affect the outlook for IFS in specific locations, and Section VI concludes.

II. Economic Benefits and Fiscal Costs of Hosting an IFSC

How hard countries or jurisdictions should fight to attract IFS business obviously depends on the net benefits to be expected from success in the endeavor. Yet there are few studies of whether having an IFSC adds to an economy's rate of growth and to the living standards of its people, all

⁴ The report of the *Ministry of Finance* (2007) on making Mumbai an international financial center is one example.

⁵ For instance, a March 2007 conference on U.S. Capital Market Competitiveness, convened by the U.S. Treasury Department, called for initiatives to replace the fragmented and largely rules-based U.S. regulatory structure with a (more) unified and largely principles-based structure similar to that of the U.K. Financial Services Authority.

considered. There is also little or no quantitative work on the optimal degree of integration of offshore and onshore operations and on the links to be encouraged between them at various stages of development.

Regarding fiscal costs, the list of government measures to establish and grow IFSCs is long and varied. The general practice is to tax very sparingly, if at all, income earned from international financial service business either by those conducting it or by nonresident entities financing it through their deposits, investments, and loans. For instance, withholding taxes generally are not imposed on the interest income of such entities. Outright discrimination in favor of offshore over onshore activities is common and pervasive as, for instance, when the tax on bank profits from the Asian-Currency Unit (ACU), but not the Domestic-Banking Unit (DBU) of Singapore banks was cut from 40 to 10 percent in 1970 (*Jin* (2005), p. 211). Such discrimination is also involved when expatriates employed in the international financial service business receive generous tax-free allowances in Hong Kong, or when those who have been accorded “enhanced fund manager” status in Singapore enjoy a complete tax holiday on fee income from providing investment management and advisory services to foreign investors (*Jin* (2005), p. 222). Where there are value-added taxes as in Ireland, the international financial business may be exempt. Direct and indirect fiscal subsidies that provide cost savings and in-kind benefits to the IFS industry are common. These may take the form of government expenditures on IFS-friendly regulation, training, and the construction of pertinent infrastructure. Dubai is one of the latest examples of a government-sponsored IFSC.

Pump-priming of lines of the financial business that are to be drawn to a particular location is also common. The Monetary Authority of Singapore and the Government of Singapore Investment Corporation, for instance, had placed \$ 35 billion with managers in the private sector to encourage the growth of the fund management industry (*Park/Ito/Wang* (2005), p. 9). In addition, the government provided almost one fifth of the venture capital funding made available in Singapore, and there is preferential tax treatment for capital gains that are particularly important for the venture-capital industry (*Jin* (2005), pp. 225–226). In future, sovereign wealth funds may help jump-start their own IFSCs by investing in privately managed foreign-investment funds at home.

Another tax-expenditure is due to the loss of seignorage that is associated with currency substitution being facilitated by hosting IFSCs in countries that do not have a domestic currency of international standing.

In Hong Kong, for instance, over 50 percent of banking business has been in foreign currency denominations, mostly USD (*Huang* (2005), p. 195). Thus internationalization and substitution against minor currencies have tended to shrink the relative size of the domestic-currency component of the financial sector of financially open economies (see *Bos-sone/Honohan/Long* (2002), p. 120). The size of the inflation tax base is diminished and the disincentive to inflate is strengthened by (the threat of) currency substitution.

Considering tax preferences, subsidies, lower seignorage revenue, and government expenditures on IFS-development together, IFSCs and OFCs are not likely to contribute fiscally to the countries that compete for them by market and nonmarket means. Rather they are associated with a narrowing of the tax base toward non-traded services and immobile factors. Such a tax structure may be justified under the inverse-elasticity rule of optimal taxation but may run afoul of tax equity and of international rules against competition-distorting government tax concessions. Hence the extra economic benefits of hosting IFSCs rather than some other ICT-intensive business would have to be sufficient to compensate for the extra fiscal costs. Only the location choices for the commoditized parts of the IFS business appear to conform to the laws of global competition and cost efficiency without depending on government promotional activities.

III. Macro-Level Efficiency Criteria for IFSCs

1. *IFSCs' Mixed Contributions to Global and Domestic Macro-Level Efficiency*

Two aspects of efficiency of the financial system, macro and micro, are commonly distinguished. Macro-level efficiency relates to the efficient transfer between surplus and deficit units – or lenders and borrowers, savers and investors – both within and between countries at low cost and with minimal risk of a major financial crisis. As *Denizer/Dinc/Tarim-cilar* ((2007), p. 192) note, adverse environmental factors, such as a high degree of volatility in inflation and growth rates, detract from banking efficiency and the effectiveness of financial reforms.

An IFSC's positive contributions to the macroeconomic efficiency of its host country can come through two channels: It may contribute to growth and stability first through its influence on the choice of the tax,

currency, and exchange-rate regimes (von *Furstenberg* (2007)). Secondly, it may do so by increasing spill-in from “the great moderation” in advanced countries like the United States. For instance, Hong Kong, which has maintained a fixed exchange rate with USD since 1983, has a high exposure to world-economy shocks represented by the United States (see *Genberg* (2005), p. 22), and the influence of its financial channels to the world is stabilizing. The reason is that U.S. real interest rates, that impact Hong Kong’s, have moved in a manner consistent with an active application of the Taylor rule for at least two decades, thereby providing countercyclical-policy benefits for Hong Kong as well. By contrast, *Cheung/Tam/Yiu* ((2006), p. 11) found “no substantial evidence that the Chinese interest rate is driven by the U.S. rate” in spite of the RMB’s tight peg to USD over the 10-year sample period ending April 2006. The continuing effects of capital controls (*Ma/McCauley* (2008)) likely were the cause.

An IFSC’s contribution to financial stability, and hence to macroeconomic efficiency, can not only be positive. In a world of increasingly global capital mobility that is perfected by IFSCs, global financial imbalances become everyone’s problem, and unsound or inappropriate financial derivatives get into portfolios far and wide. For instance, if in recent years there has been a “global savings glut or global investment drought” in hard real assets (*Blommestein* (2008), p. 29, and references there given). The consequent underpricing of risk in the search for extra “returns” became a set-up for disaster. It helped create conditions conducive to a major financial crisis when the inadequacy of provisions for risk was revealed starkly in 2007. As one of several manifestations of fateful interconnectedness, low-cost liquid funds invested in U.S. subprime mortgages that were then securitized, often in priority tranches, resulted in leveraged structured derivatives. The issuers placed these all over the world and caused major losses not just to banks and their shareholders but for various institutional investors. Indeed, propelled by rosy ratings, junk credit travels fast and is truly globalized: Europe’s roughly 40% share of the total losses from U.S. subprime mortgage-related investments compared with 50% for the United States, as projected by the *IMF* ((2008), p. 52), is in rough proportion to the respective GDPs.

Hence to the paean about IFSCs, in the absence of capital controls, efficiently connecting savers and borrowers, sharpening risk analysis, and bringing welfare gains from the more efficient allocation of capital throughout the world, a note of caution may be added. It is about the

growing global susceptibility to financial viruses wherever they may originate in the world and about IFSCs having a somewhat damaged auto-immune system on account of herding.

2. *Ethical Issues in IFSCs*

International Financial Service Centers participate in constructing, trading, and placement of any financial product in which their customers can get interested. The normal fiduciary responsibility is not to get clients, who could be passive hedge fund investors, into financial positions whose levels of opaqueness and risk are unsuitable for their circumstances and degree of financial sophistication. When the client itself is a fiduciary rather than the ultimate beneficiary of investment, the interests of the latter, such as a private pension recipient, should determine the appropriateness of investment. Strong internal administrative and operational controls should be in place to minimize risks of malfeasance of the kind that brought down Barings in 1995 and weakened Société Générale in 2008. Other commendable practices are “mark to market”, or at least the continuous provision of information on the current market value of positions, even if certain legal and regulatory consequences of “mark to market” for meeting capital adequacy requirements and for continuing operations may be suspended temporarily in a major crisis. There should also be prompt disclosure of operating losses and of balance-sheet exposure to newly emerging, or newly understood, risks, and prompt corrective action in all but exceptional circumstances of a widespread loss of liquidity that poses systemic risks of financial meltdown.

Unfortunately executive compensation of financial executives is known to be misaligned with prudent risk taking (*Blommestein* (2008), pp. 27–28): They share in the gains from excessive risk taking and the introduction of products whose complete risk profile remains hidden from their clients, but they do not share commensurately in the losses in any ensuing financial crisis. Although IFSC executives cling to such lucrative disincentives to prudent management, strong internal controls could limit the direct harm inflicted on the institutions they lead. Excessive risk taking could be discouraged if the maintenance of long-term relations with individual and institutional clients were asserted successfully as an IFS firm’s core value, but current remuneration practices of managing executives do not support such an orientation. Individual IFS providers may thrive on contrarian strategies (e.g., through their hedge fund activities)

and counteract the underpricing of risk. Yet IFS providers as a group inevitably are part of the system leading to such mispricing at high cost to bystanders and society at large (Goodhart (2008)).

3. IFSCs and their Possible Contribution to National Economic Fragility

There are other possible sources of instability. If there is a substantial leakage of funds raised from nonresidents into the domestic financial system, known as *out-in* by its sources (nonresident = out) and uses (resident = in), the regulatory and reserve standards applied onshore will in fact be no higher than those applied offshore. Because of this leakage, currency-denomination and maturity mismatches may intensify, and domestic monetary policy may be undermined. Kaufman ((2000), p. 6) relates that fully 60 percent of the \$ 50 billion in loans made by the ostensibly “offshore” Bangkok International Banking Facility (BIBF) in the year before the East-Asian crisis that started in 1997 were “out-in” transactions used to finance domestic firms. Especially when there is a strong expectation that exchange rate fluctuations with USD will continue to be small, maturity mismatches and carry trades of borrowing cheaply in major foreign currencies to lend at much higher interest rates in local currencies may be encouraged. As the 1997–98 East-Asian troubles showed, a deep crisis ensues when such fair-weather strategies come to grief and disrupt the financial intermediation system. Fragility may also have been raised because banks that operate in branch form in the offshore sector may not be required to hold capital nor be subject to minimum capital-adequacy requirements and to capital-based limits on large exposures (Huang (2005), p. 204). Add the increased probability of supervision failures in complex networks of financial relationships and the result is that “some offshore centers have magnified any financial problems in their countries” (Kaufman (2000), p. 6).

A substantial leakage in the opposite direction, *in-out*, causes sudden credit contraction and asset deflation associated with capital flight. Business-cycle synchronization among Asian countries in the 1990s can in part be explained by synchronization of net capital flows and the ensuing boom-bust cycles after financial market liberalization (Park/Ito/Wang (2005), p. 5).

4. Domestic Policy Obstacles to Financial Development

IFSCs can function as market makers for their region's securities to the world. Conversely they can provide risk reduction through internationalization of the portfolios of domestic investors. However, capital controls may transform diversifiable into non-diversifiable risk for the residents of the area under such controls. The China-Mainland stock markets present a high level of, otherwise diversifiable, risk. *Jeon/Oh/Yang* (2006), p. 85) have estimated that the Shanghai and Shenzhen markets are the least correlated with other stock exchanges, in particular the U.S. market (correlation coefficient 0.019), while the Hong Kong market has been the most correlated (0.594) with the United States among 10 East Asian markets in their study. This suggests that there is much more idiosyncratic noise in the Mainland than in the Hong-Kong China market. To the extent capital controls continue to hamper international portfolio diversification in the Mainland in spite of the progressive expansion of quotas to invest in foreign exposure under the Qualified Domestic Institutional Investor (QDII) scheme, the globally non-systematic part of the volatility of China's stock market, like its political risk, is non-diversifiable for its residents.

Controls on maximum deposit and minimum lending rates and official credit guidance long have stunted the development of the RMB loan and bond markets (see *HKIMR/BIS/CEPR* (2006)). *Liu/Yang* (2005) thus noted an "underlending syndrome" on China's Mainland. Furthermore, market-based yield curves for a full range of financial instruments and for the construction of derivatives have remained incomplete. Derivatives need such yield curves for information, pricing, arbitrage, and product development. They also need interest rates on RMB-denominated instruments that are determined freely in international financial markets. Lacking these, internationally hedged interest parity has been grossly violated (*Ma/McCauley* (2008)), as the pricing of RMB/USD Non-Deliverable Forwards has not been tied down by arbitrage. Underlying conditions have started to change in these respects, with forward exchange rates built on Shibor, the Shanghai interbank offered rate, and its yield curve up to one year, becoming available in early 2007 and international RMB issues proliferating in the Hong Kong market.

IV. Microeconomic Efficiency Measures for IFSCs

Measuring the efficiency of the financial service industry and its different lines of business presents special challenges. As *Welch* (2006) explained, the simple accounting approach, of using cost-of-funds to gross-income ratios as an inverse indicator of efficiency, has severe problems. The reason is that profitable financial services that are fee intensive inherently are cost intensive as well. Performance-related pay and option values for lead executives also may drive up the accounting measure of costs together with firm income (see *Kaplan/Rauh* (2007), p. 37). Hence cost/income ratios tend to be elevated for high-value added services.

Major providers of international financial services are multi-product firms. The allocation of costs that is required to establish the profitability of each product is difficult because many of them utilize common facilities of the firm. Cost and value attribution are even more complicated because many of the financial products of the firm potentially are in joint demand by its customers and may also function as service inputs to its outputs. Progressive commoditization and outsourcing of sub-functions have facilitated the accurate pricing of those activities that are performed not only in-house but also by specialized suppliers and monolines which price them directly in the market. This fragmentation in the IFS business is enabling and creating pressure for more precise cost and profit accounting for a range of functions.

The price of functions that can be commoditized has been declining sharply (*Jones* (2002)) relative to that of actively managed and custom-tailored functions. Thus discussion of costs and benefits of advanced IFSCs relates to upper-level services displaying heterogeneity of supply and demand: They are performed subject to negotiated remuneration and economic-rent sharing arrangements for their top executives and demanded by high-net-worth individuals and institutional investors requiring individual attention. In private banking, for instance, an accepted premise is that wealth management is not about selling products but about advice.

1. Applications to Measuring Microeconomic Efficiency

A companion paper (*von Furstenberg* (2008)) has surveyed technical methods, such as Data Envelopment Analysis (DEA) and Stochastic Frontier Analysis (SFA), which have been used in conjunction with profit effi-

ciency measures and its components (e.g., revenue efficiency and cost efficiency) to compare the efficiency of particular classes of financial institutions within and between locations. For management and policy purposes it may be necessary to analyze and decompose readings from several such measures, as efficiency comparisons based on a single criterion may be misleading. *Denizer/Dinc/Tarimcilar* ((2007), p. 181) provide a good example when they reject measures of intermediation efficiency for state-owned and privately-owned banks as insufficient by themselves. They report finding no difference in the efficiency with which deposit inputs were linked to loan outputs by the two groups, a result they called “unexpected”⁶. They note that if they had been able to adjust the measure of loan output for the loss of (non-performing) loan value from “political” lending by state-owned banks, the result could have been very different.

Blommestein/Santiso (2007) similarly emphasize that cost-effectiveness should not be the sole decision criterion when public-debt managers assess which instruments to issue – by indexation features, maturity and currency denominations. Rather the government’s entire asset and liability profile is to be managed with an eye also to providing for macroeconomic shock absorption, i.e., consumption smoothing subject to maintaining debt sustainability.

An empirically difficult set of distinctions is between technical and allocative efficiencies as recently reviewed in *Brissimis/Delis/Tsionas* (2006). While it has been estimated that banks in Europe on average would gain about as much from better allocation of inputs (16%) as from reaching the highest available standard of efficiency (18%), the three co-authors ((2006), pp. 19–20) note that the use of individual inputs for particular bundles of financial services is still too little investigated. Cost Effectiveness Analysis (CEA) is popular to evaluate new business strategies *within* financial service firms in part because it skirts the problem of first specifying the interconnections between all the inputs and outputs of the firm. It focuses instead on the estimated cost difference of a new candidate strategy and the current strategy, and relates that “cost” difference to the corresponding “effect” difference. If the latter is also measured in dollars, the approach allows comparing the marginal cost-benefit ratios of alternative strategies. However, application of CEA across firms is useful for identifying reasons for differences in profitability or in other di-

⁶ *Claessens/Glaessner* ((1998), p. 30) report a similar disconnect for insurance companies in South Korea: They appeared remarkably cost-efficient but many of them were technically insolvent.

mensions of their performance only if these firms' business activities and the conditions they face differ in but a few isolated respects.

Attempting to compare efficiency *between* sets of institutions within or across countries or places, a study by *Kwan* (2006) found a total cost inefficiency of 16–30% for the banking sector in Hong Kong 1992–99, similar to the average inefficiency level of U.S. and European banks relative to their respective champions. *Fu/Heffernan* (2007) estimated a much greater degree of inefficiency, 40–60%, for banks on the Mainland for 1985–2002. The implications are that differences in the degree of inefficiency between different types of banks – state-owned and subsidized or private and competitive – and the average size of these inefficiencies are much greater in Mainland China than in Hong Kong SAR or other world-class financial centers. This could be due to deficiencies of competition policy and incomplete privatizations in the Mainland, but this kind of analysis, like CEA when applied across very different firms, is too opaque to tell.

Inefficiency measures such as these recently have been questioned fundamentally because they move so little over time as to appear beyond self-correction. The fundamental reconsideration called for in *Carbó Valverde/Humphrey/López del Paso* (2007a, 2007b) thus questions the significance of broad inefficiency measures for management and operations. These authors note that when the average cost of inefficiency in various nations' banking industries keeps being estimated at 20–25% as *Berger/Humphrey* (1997) had reported in their far-reaching survey, the average bank could more than double its net return on assets (assuming realistically that net income is equal to around 17% of total costs) by restructuring operations to look like those banks that appear to be most efficient. If so, the incentives to restructure should be overwhelming. However, the average levels of measured inefficiency do not seem to be consistently falling over time for any of the numerous countries that have been studied. Hence *Carbó Valverde/Humphrey/López del Paso* (2007a, 2007b) ask whether measures of inefficiency are (a) overstated and incentives to improve that much weaker or (b) measured correctly but attributable to factors that lie largely beyond the effective control of management.

They conclude from a study of Spanish savings and commercial banks ((2007a), p. 216):

“By achieving efficiency levels of over 0.99 for interest costs and from 0.94 to 0.96 for operational expenses, it is clear that banks do not actu-

ally misuse 20–25 % of their resources.” Some of the productivity differences may be intentional and not reflect a missed opportunity to reduce costs. For instance, “many banks will purposefully hire more workers per branch office and/or provide what seem to be ‘too many’ ATMs and standard branch offices as part of a competitive strategy to be more accessible and to provide more convenient services”. Hence only 1–5 percentage points of the 20–25 % cost inefficiency may be unexplained or represent a kind of X-inefficiency that could potentially benefit from corrective action by management.

A more recent study by the same co-authors (2007b) for a broader set of European banks similarly found that country-specific differences in the business environment that are largely out of the hands of banks explain a larger portion of the cross-country efficiency differences than is usually the case with standard analyses that focus only on bank-specific cost conditions.⁷ By reducing the scope for *unmeasured* environmental variations, this careful work moves the debate away from the stalemate implied by the justified doubts earlier expressed by *Berger* ((2007), pp. 134–135) about using a common meta-frontier. He argued that it is unlikely that any controls for environmental differences or any methodological breakthroughs are sufficient to eliminate the possibility that measured (international) differences in efficiency are due to unmeasured environmental variations rather than actual efficiency differences.

2. Differences in Market-Quality

Certain IFSCs function as market makers for their region’s securities to their citizens and to the world. Their microeconomic efficiency in performing this function has been analyzed by the liquidity, volatility, and relative absence of price anomalies, bubbles, and crises in their regional or national securities markets. *Liu/Yang* (2005) have applied this approach to evaluate the microeconomic efficiency of the Shanghai market even before it became an IFSC. They gave that market low marks: Its systematic risk for domestic residents is high as stocks show pronounced co-movement with a “political” factor. Price/earnings ratios are excessive, volatile, and bubble-prone in their view. They also find positive ex-

⁷ *Kwan* (2003) had found that per-unit bank operating costs differ systematically across Asian countries but for reasons attributable to differences in their native bank production functions rather than to differences in the degree of openness of their banking sectors.

cess returns for small firms, a finding familiar from a “priced factor” in advanced markets. On the other hand, bid-ask spreads are low in Shanghai compared with Hong Kong where stock broking is cartelized. Except for the low spreads, these factors are not propitious for growing an IFSC in Shanghai and need to change.

3. *New Developments and Analytical Challenges*

Internationally active banks increasingly have become intermediaries between other financial intermediaries rather than between depositors and clients from the nonfinancial sector. As the composition of financial services demanded from banks changes, so do their profit centers and risk exposure. Carry trades are becoming increasingly widespread in which banks borrow in low-yielding markets and currencies to lend in high-yielding currencies and countries to institutions, including their own subsidiaries. These trades, carried to extremes most recently by Nordic European banks with the Baltics (*IMF* (2008), pp. 24–26), generally involve a combination of maturity and currency risk, including currency risk introduced through unhedged counterparties.

Banks’ business model has changed increasingly from originate-and-hold to originate-and-distribute. So they have originated (or acquired from nonbank mortgage and loan brokers) multiples of the assets they show on their balance sheets through securitization and establishment of Structured Investment Vehicles (SIVs) that are funded largely with purchased money-market funds. The layering of the resulting securities into senior investment-grade and junior (equity) tranches and the further decomposition of these tranches by their different streams of returns produce the “slicing and dicing” for different portfolio requirements, time-profiles of pay-out, and risk appetites underlying this business model.

The result of issuing asset-backed securities including collateralized debt obligations is to increase income through higher leverage and risk. The major risks tend to be highly positively correlated across institutions and several asset classes. In addition they have a low, but relative to the normal distribution not nearly low enough, frequency of occurrence. This produces fat tails, or tail risk. As a result, major risk events may cause markets for high-risk derivatives, and the obligations of financial institutions most invested in them, to freeze up. The result may be a spreading liquidity crisis and a credit crunch capable of having significantly adverse macroeconomic consequences for growth and employment.

Thus there are private and social, indeed systemic, costs that may arise from excessive leverage and opaque and conditional transfer of credit risk, and from marketwide liquidity risks. These costs and risks arise from the pyramiding of claims across financial institutions, the breakdown of various forms of portfolio insurance and loss limitation in a crisis, and the reflux of the costs of major risk events back to the original issuers of the derivative securities and tranches. Just as the aggregation of on- and off-balance sheet activities by banks and financial institutions has become an issue on account of their contingent take-back and unwind obligations, the appropriate extent of intertemporal aggregation, with its evolving risk-features discovery, has become a challenge for measuring the dynamic efficiency of modern banks. How long should be the analytical window of appropriate panels to allow for inclusion of the occasional very bad year along with results for the many fat years? How should government-orchestrated bail-outs and taxpayer costs be treated in measuring the efficiency of financial institutions that benefit from them directly and indirectly via their counterparties?

Hence it is an open question whether methods, based on various paired forms of financial input-output analysis, that have been used in the past to evaluate the comparative efficiency of financial institutions can be elevated to provide measures that are still useful for gauging cross-sectional differences among them within and between countries and banking systems. Input-output measures constructed from balance sheets, income statements, portfolio groupings and ratings do not readily reveal the exposure of the financial system to crises, their costs, and the financial system's contribution to factors associated with such crises. Such factors, more fully catalogued and dissected in *IMF* (2008), include inappropriately risky and inadequately capitalized contracts and constructs that are driven by asymmetric compensation schemes and agency flaws in their promoters. They also include asset price bubbles propelled by offering credit, as in the form of subprime mortgages, on what are essentially call options that are in the money only with asset appreciation. Hence evolving industry practices generate macroeconomic risk conditions that feed back to the locally correlated return profiles of individual institutions.

V. The Outlook and Future Location for OFCs and IFSCs

As *Tschoegl* ((2000), p. 9) has noted, simple considerations of the cost of labor, land, and capital tells us little about the location of financial centers. Instead, international politics, political stability, suitable domestic regulation, the development of communications and aviation networks, and good location of cities have combined to favor some places and handicap others.

Congested cities, such as Hong Kong and Singapore, may especially welcome an environmentally clean service industry that requires only low levels of material supplies and utility inputs and relatively little ground area or plant and heavy equipment. Furthermore, the industry's disproportionate reliance on ICT infrastructure and on systems for extensive training of a skilled workforce contributes to spillover benefits and cost savings for high-value-added services generally. *Tschoegl* (2000) believes that the communications revolution that has minimized the economic significance of distance or *space* has not equally diminished the importance of *place*. *Clark* (2002) cites scale economies and product complementarities combined with a distinctive regulatory heritage and the interaction between market liquidity and the scope of products offered as keeping the financial business tied to the ground in London. Like *Tschoegl* (2000) and *Sassen* (2002), he dismisses the thesis of "the end of geography", such as that reflected in *Kaufman* ((2001), pp. 375–376), that acceleration of advances in telecommunications and computer technology in recent years is likely to further reduce the need for physical and permanent IFSCs. Yet the communities and frequent contacts of top IFS professionals are increasingly virtual and global as many of them appear to be in perpetual motion and constantly connected for the benefit of clients. Furthermore, it has rarely been considered whether global financial system security, uninterrupted maintenance and development, and systems-failure management are better served by physical concentration or by dispersion of IFS providers and back-up facilities. The financial crisis of 2007–2008 also showed that access to a national or country-group lender of last resort able to create international liquidity by fiat can be a geographically selective back-up asset. The ECB, for instance, does not accept securities related in any way to U.S. subprime mortgages as collateral for its lending operations even though banks in the euro area have plenty of such securities. The Federal Reserve, however, did accept some subprime-related collateral, since marked down, in the Bear Stearns federally-mediated takeover and in other rescue operations.

Blommestein (2006) discerns two opposing tendencies at work. Having global communications available at negligible cost indeed has made some lines of the financial service business entirely footloose in that it has no attachment to place. Where those services are performed is dictated by current cost considerations, and there is little to inhibit rapid relocation. If a particular line of the financial business is subject to economies of scale in service production but also to diseconomies of distance (see *Rose/Spiegel* (2005)), the business could tend to become more concentrated by location when distance costs fall. As *Berger/DeYoung/Udell* (2001) point out, efficiency barriers to operating across borders may arise from distance, from differences in language, culture, currency, and regulatory/supervisory structures, and from rules biased against foreign competitors. If any of these efficiency barriers to the export of financial services diminish, remote locations can be serviced 24 hours a day at lower cost from a given center. Yet traditional financial centers may not benefit. Instead, specialized centers designed to perform low value-added financial services, such as routine billing and accounting services, may spring up in cost-effective locations anywhere. In the United States lower-level activities may shift from the New York City area to South Dakota and to spare-capacity cities such as Buffalo before moving on to Central-American and Asian (mostly Indian) service centers.

On the other hand, *PricewaterhouseCoopers* ((2005), pp. 5–6) and *Blommestein* (2006) also find that high-value added financial services have to address increasingly complex and long-horizon management tasks in close collaboration with clients. Hence footloose international financial services and sticky such services, that cling to their established relationship with IFSCs and their distinctive individual and institutional client base by location, will co-exist.

Several contributions in *Pastré/Jeffers/Blommestein/de Pontbriand* (2007) elaborate on the themes that rising competitive pressures will force institutions to differentiate themselves aggressively, and that cost efficiency will remain the key. Thus two distinct strategies that can sustain competitive advantage, differentiation and cost efficiency, first identified by *Porter* (1985), are at work in reshaping the financial services industry. On the one hand, the search for cost efficiency leads to simplification and standardization, as through the use of index products and passive (computer-driven) screening techniques in asset management, to drive down cost (see *Moles* (2006)). Indeed, fragmentation of production is becoming almost as pronounced in IFS as it has been in manufacturing

for some time. Yet on the other hand, particularly in private banking and in dealing with high net-worth individuals, fee-intensive differentiation through customization is the key to competitive success.

VI. Conclusion

From Dubai, to Mumbai, and Shanghai, aspiring international financial service centers like to claim that hosting IFSCs is so desirable that subsidizing their initial, or even continuing, operations is warranted. With so many of the participating institutions being foreign and top performers expatriates in new IFS locations, there tend to be big differences between how much aspiring IFSCs contribute to local GDP, and how little to GNP that actually counts. Some evolutionary trends loosen and others maintain or strengthen ties to location, depending on the sophistication of the lines of IFS business involved. The protections provided by agglomeration effects and strong hysteresis in economic geography may be weakening: Electronic network groups and platforms and virtual “communities” may replace the benefits of physical togetherness and ease of interaction in one place. Yet high-value services tend to be delivered to, mostly institutional, clients who congregate in a particular place and provide a testing ground and test market for innovations in financial products and practices.

Given these diverging tendencies in the global competitive environment, what public/private strategies promise to be most profitable and sustainable for developing and conducting ever-changing configurations of financial-business functions? Among the macroeconomic prerequisites are limited, but not necessarily minimal, government at all levels in a reliable state with a sustainable and predictable economic and political environment. Infrastructure and human capital requirements include fit communications, financial intelligence, prudential regulation, advanced trading and settlement facilities, and legal and audit systems.

On the microeconomic side, cost effectiveness analysis, often in the form of monetary cost-benefit analysis conducted at the margin of expansion of particular lines of business, may seek out profit opportunities or desirable adjustments of the business model within IFS firms. There are other techniques that attempt to answer the key question of how the efficiency of IFS firms would compare by location. However, these techniques focus on measuring the size of metropolitan or national efficiency differentials between sets of institutions, not their causes. Recent re-

search has found that the competitive-elimination predictions of these forms of analysis, e.g., Data Envelopment Analysis and Stochastic Frontier Analysis, have not been validated. This casts doubt on the operational significance of the residual efficiency-difference measures between locations that are produced by such forms of analysis. Another challenging question is what particular expertise and areas of innovation, and which of the high-value-added lines of the IFS business that still have distinct attachment to central locations, could be profitable without government subsidies, or intrafirm cross-subsidies in chosen places of operation. Start-up IFSCs in South and East Asia, some benefiting from the huge IPOs attending privatization of state-owned industries and banks, from on-going diversification of international reserves, and from the management of Sovereign Wealth Funds entrusted to them by their government, are eager to find out: Some will become geographic clusters of innovation combining competitors, collaborators and infrastructure with having an “in” on international intermediation for a large and rapidly wealth-creating domestic market.

Looking further ahead, it appears that the literatures on the macroeconomic origins and effects of banking and credit crises, aptly summarized and advanced in *Reinhart/Reinhart* (2009), and on the measurement of efficiency differentials between banking firms need to be linked. There must be a fuller accounting for the risks associated with the returns generated by the spectrum of such firms and of who bears the resulting losses. Gains and losses then could be attributed more easily to the appropriate originating or managing parties, or to third parties, including those responsible for regulation and oversight. If no bank or other financial institution shall be “too interconnected to fail or too big to fail”, as U.S. Treasury Secretary Paulson ((2008), p. 4) has proclaimed, then, assuming nothing is to be done about “size”, the failure of such institutions must be precluded through their own efforts in all but the most extreme circumstances. This would have to be accomplished through more adequate provisioning and the practice of early intervention based on foresighted, rather than reactive, internal and external prudential oversight. This oversight would regard the quality of the risk management by banks as a crucial aspect of their long-term efficiency for securing their survival and growth. Inferring this forward-looking aspect of efficiency from market data on balance sheets and revealed or planned earnings characteristics poses a major challenge requiring dynamic industry and firm analysis.

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Summary

International Financial Services: Location Preferences and Economies

Advanced and rapidly developing countries vie to bring International Financial Services (IFS) industries to some of their major cities or to keep them there. The ICT revolution has made those IFS that can be commoditized footloose in search of cost efficiency. High value-added financial services, however, continue to be produced in a few major IFS centers that have capitalized on regional or global advantages for themselves and their clients. The resulting pattern of functional fragmentation and geographic dispersal could facilitate analyzing the competitiveness of different lines of the financial services business in a particular location. Yet the conclusiveness of methods applied to do so in the past recently has been questioned. In addition, internationally active banks’ growing emphasis on intermediating between financial institutions rather than clients from the nonfinancial sector, plus the leveraging of their balance sheets through carry trades and securitization, have posed new challenges for the evaluation of their comparative efficiency across activities and over time. Hence stock-taking appears called for. (JEL E44, F30, G20)

Zusammenfassung

Internationale Finanzdienstleistungen: Standortvorteile und Einsparungen

Fortgeschrittene und sich rasch entwickelnde Länder scheuen keine Mühen, um die internationale Finanzdienstleistungsbranche in ihren bedeutenden Städten anzusiedeln und dauerhaft zu halten. Die Revolution in der Informations- und Kommunikationstechnologie ermöglicht für standardisierbare Finanzdienstleistungen größere Freiheiten bei der Suche nach kosteneffizienten Lösungen. Andererseits werden Finanzdienstleistungen mit einer hohen Wertschöpfung weiterhin in wenigen bedeutenden Finanzdienstleistungszentren erstellt, die ihre Kapitalisierung durch regionale oder globale Vorteile für sich und ihre Kunden erreichen. Das sich hieraus ergebende Schema der funktionalen Fragmentierung und der geografischen Streuung könnte eine Analyse der Wettbewerbsfähigkeit der verschiedenen Geschäftszweige des Finanzdienstleistungssektors erleichtern. Die Schlüssigkeit der in der Vergangenheit hierzu angewandten Methoden ist jedoch kürzlich in

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Zweifel gezogen worden. Hinzu kommt, dass international tätige Banken zunehmend den Schwerpunkt ihrer Tätigkeit auf Vermittlungsleistungen für Finanzinstitutionen untereinander setzen, anstelle für Kunden außerhalb des Finanzsektors. Zusammen mit der durch Carry Trades und die Verbriefung von Forderungen erzielte Hebelwirkung in den Bilanzen führt dies zu neuen Herausforderungen bei der Bewertung der komparativen Effizienz in Bezug auf sämtliche Geschäftsaktivitäten im Zeitablauf. Eine Bestandsaufnahme scheint somit geboten.