

MAS Technology in Finance Dialogue Session

Capital Markets Back-office Processing Empirical Observations of Operational Efficiencies

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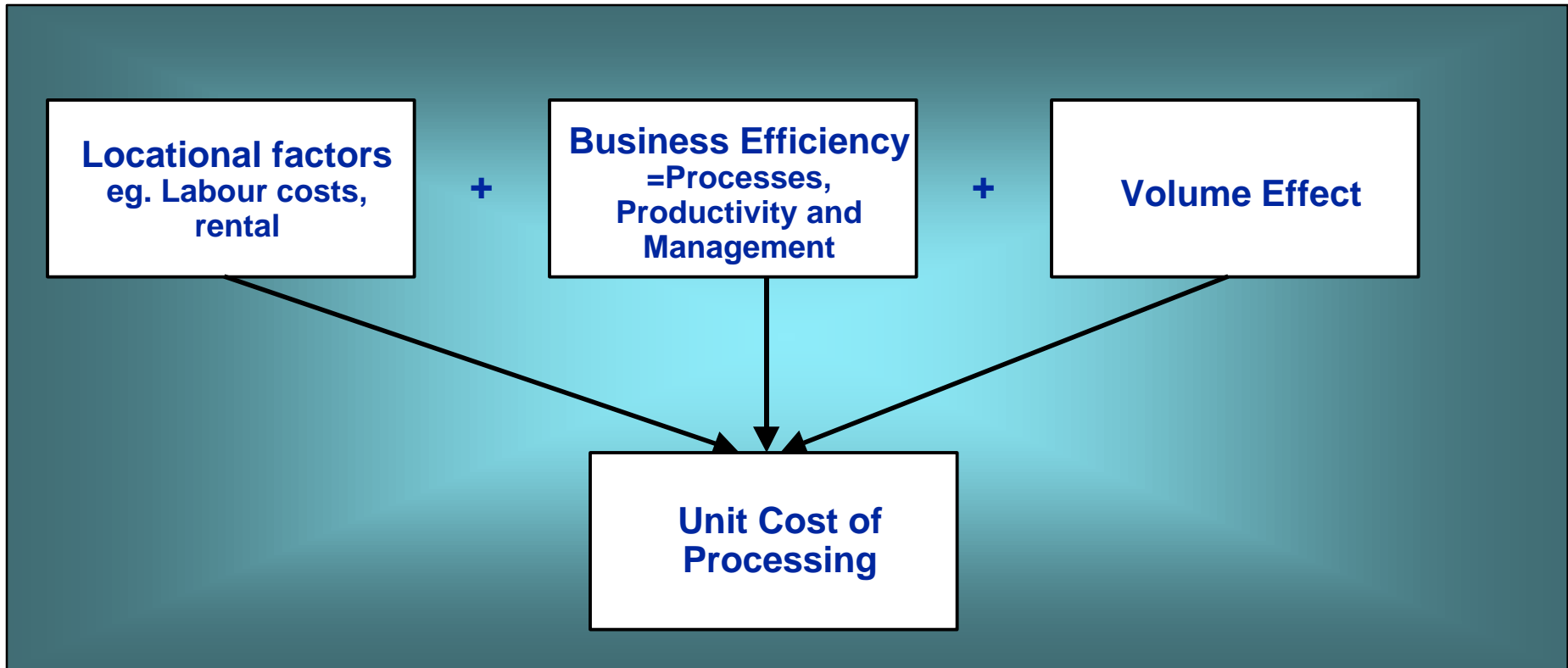
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Asia Pacific Capital Markets Survey 1999

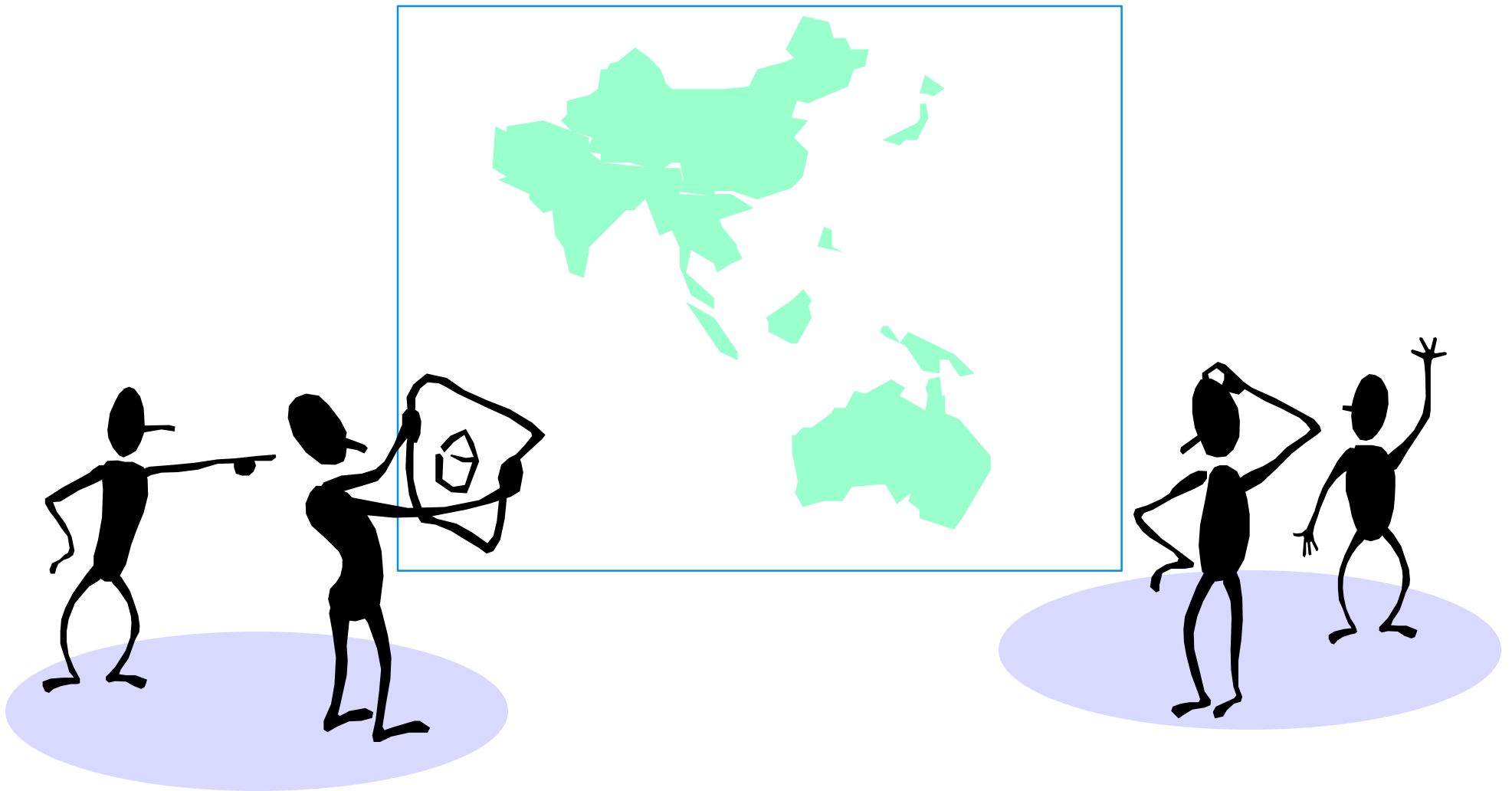
The Asia Pacific Capital Markets Survey 1999 was designed to achieve the following objectives:

- to evaluate staffing and costs structures of specific capital markets functions
- to establish unit costs per transaction for major capital markets products e.g. the cost of processing a foreign exchange deal
- to produce regional comparisons between the major trading centres
- to develop operations strategies for the industry, focussing on centralisation of operations to help bankers make their choice of location for processing centres in Asia Pacific

We believe that three main factors drive costs



Location



If locational cost is important, Sydney would be the choice location



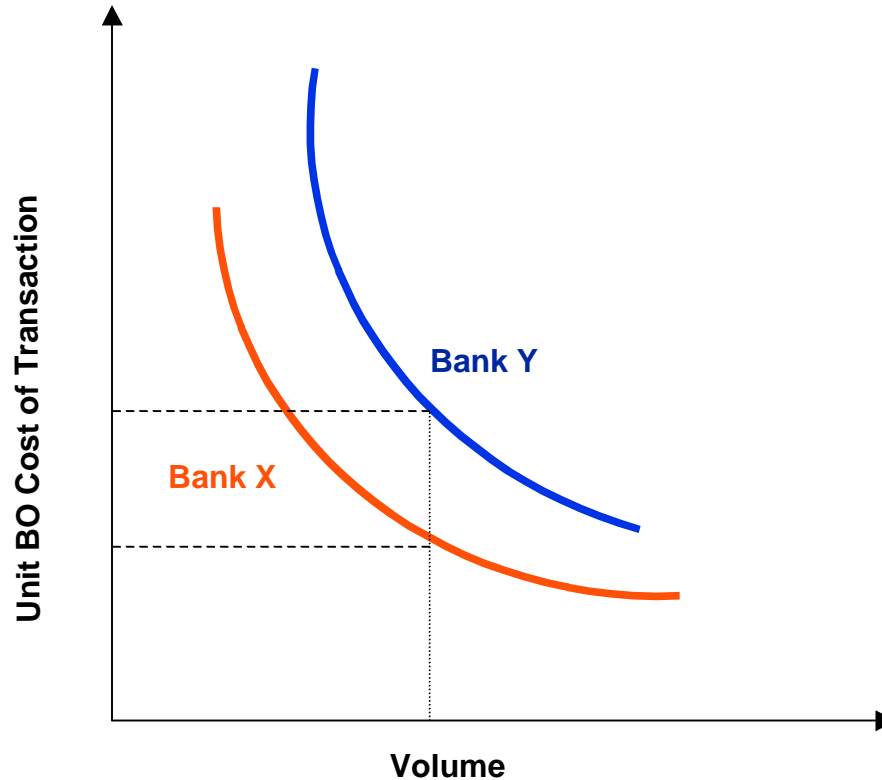
Rank and City	Index
1 Tokyo	165.50
2 Hong Kong	153.30
3 Beijing	152.10
4 Osaka	144.40
5 Shanghai	140.30
7 Guangzhou	121.20
8 London	112.40
13 Singapore	106.00
20 Paris	97.90
45 Luxembourg	87.10
47 Dublin	86.40
86 Bangkok	73.80
89 Sydney	71.80
96 Kuala Lumpur	69.60
97 New Delhi	69.10
104 Manila	67.10
107 Melbourne	66.10
110 Auckland	64.70
113 Wellington	62.90
128 Bangalore	47.40







Sydney has the lowest factor costs amongst the four locations.

Source: Corporate Resources Group unit of William M. Mercer Companies LLC, March 15, 1999. The index is widely used by private industry and governments in determining compensation and allowances for employees. The index uses New York as the base at 100 index points.

We tested whether banks and locations with similar volumes had different unit costs



Foreign exchange transaction volumes per annum and unit cost per forex transaction in sample banks

	<u>Volume</u>	<u>Unit Cost Per Transaction</u>
	197,070	\$8.69
	237,837	\$7.19
	136,346	\$15.84
	277,327	\$9.39

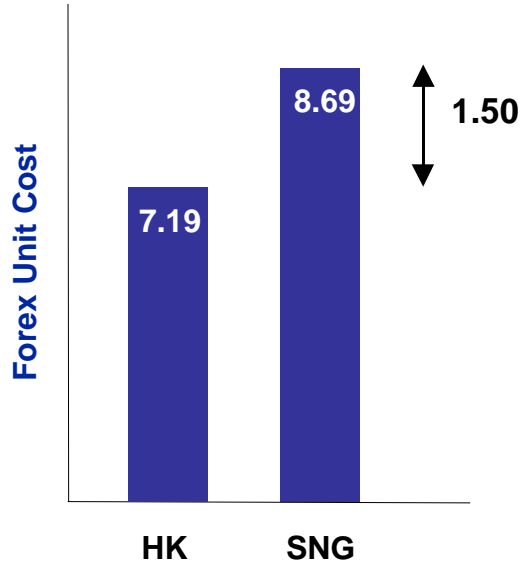
By holding two variables constant at any one time, we are then able to study the effects of the third variable

Locational Factors	+	Volume Effect	+	Business Efficiency	=	Cost per Transaction
Vary		Constant		Constant		What is the impact of locational advantages on cost?
Constant		Vary		Constant		What is the impact of volume changes on cost?
Constant		Constant		Vary		What is the impact of improving business efficiency on cost?
Vary		Vary		Vary		What is the extent of influence of the three factors on cost?

Singapore - Hong Kong



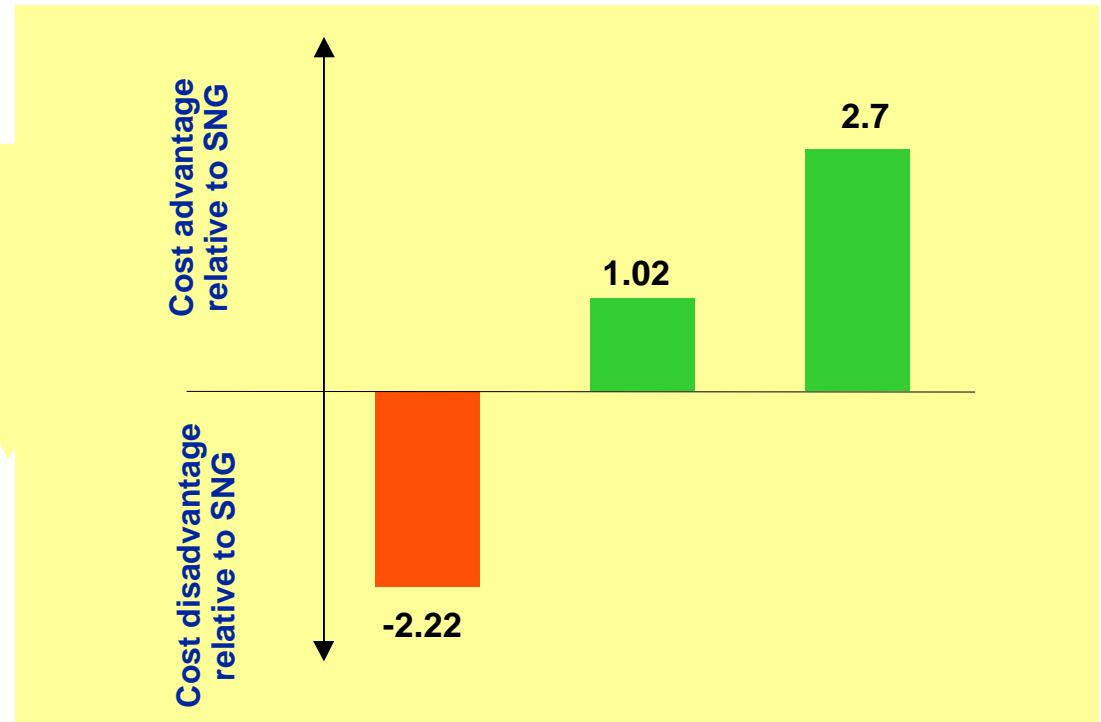
Difference between Hong Kong and Singapore



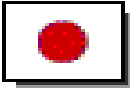
Difference due to Location

Difference due to Volume

Difference due to Efficiency



Singapore - Tokyo

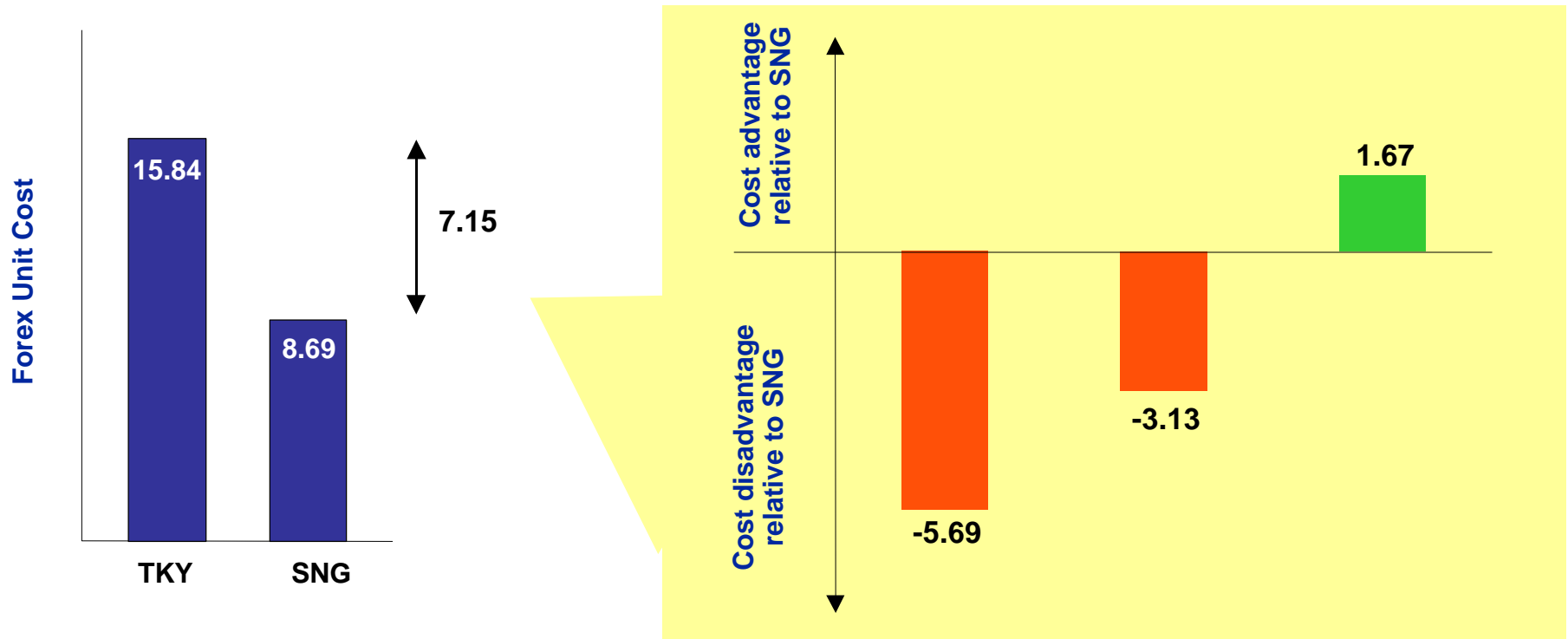


Difference between Tokyo and Singapore

Difference due to Location

Difference due to Volume

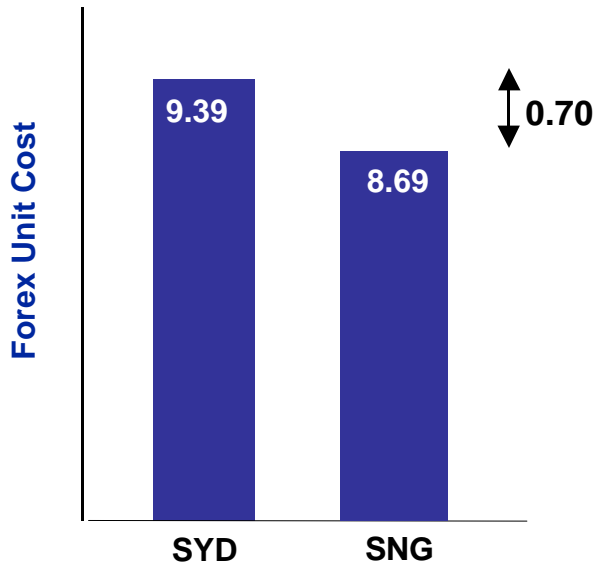
Difference due to Efficiency



Singapore - Sydney



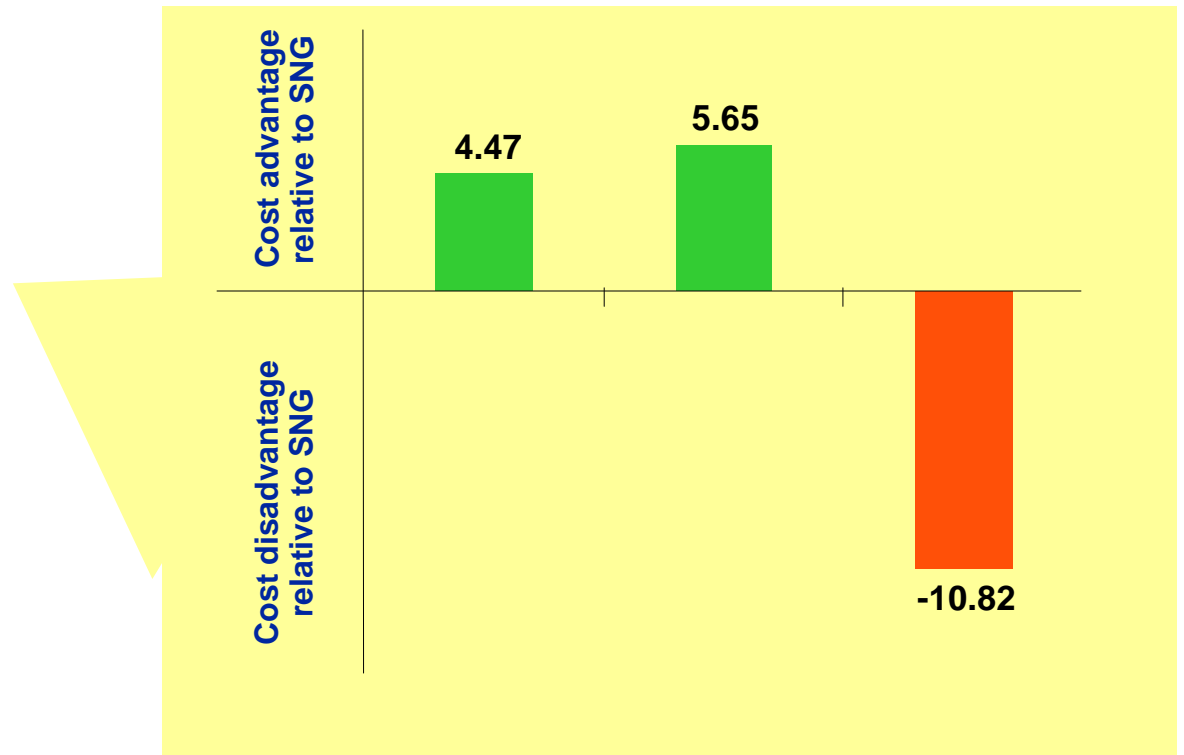
Difference between Sydney and Singapore



Difference due to Location

Difference due to Volume

Difference due to Efficiency

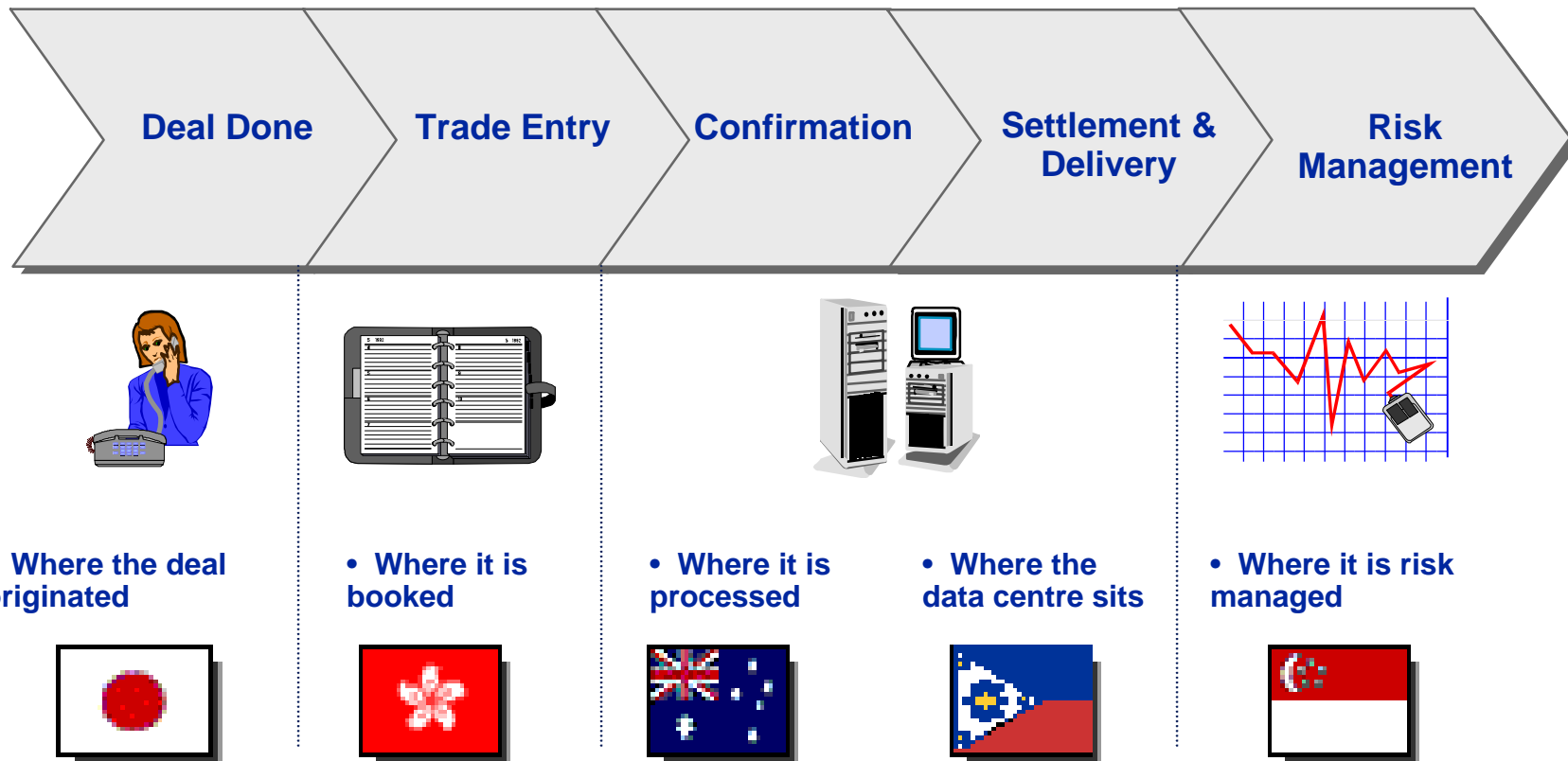


However, the key message is business inefficiency can negate the benefits of location and volume

**BUSINESS EFFICIENCY/PRODUCTIVITY IS
CRITICAL FOR LOW COST OPERATIONS**

- ✓ with the exception of Tokyo, whose location costs (labour, office space and service) are so high that they cannot compete with other Asian financial centres
- ✓ you can be in a high cost location with small volumes and still be the most efficient bank, and vice versa

The distinct activities that make up a deal do not have to be co-located



The model is continually evolving, with a focus on high volume commodity type products

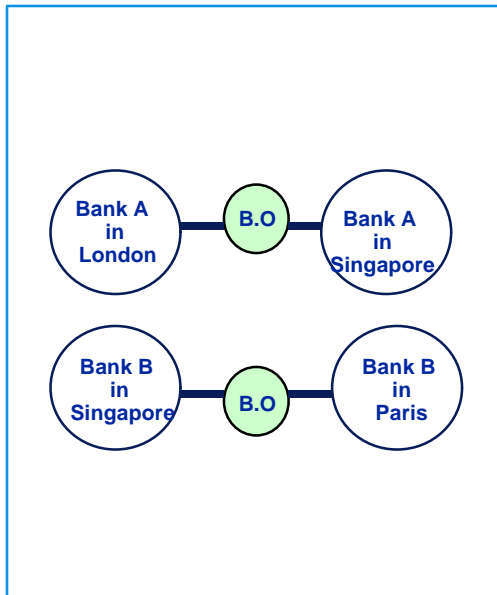
Update

- A number of major banks have some form of shared services centre for regional processing operations in capital market products.
- Typically, processing is product centric, with each product being processed in a different location.
- The most evolved regional (or even global) processing is in foreign exchange compared to fixed income, derivatives and equities.
- There are a number of major banks which effectively do not have any real shared services centre for their capital markets operations.
- There is significant interest among banks to assess the feasibility of setting up such centres for their capital markets operations.

What are some of the potential operating models?

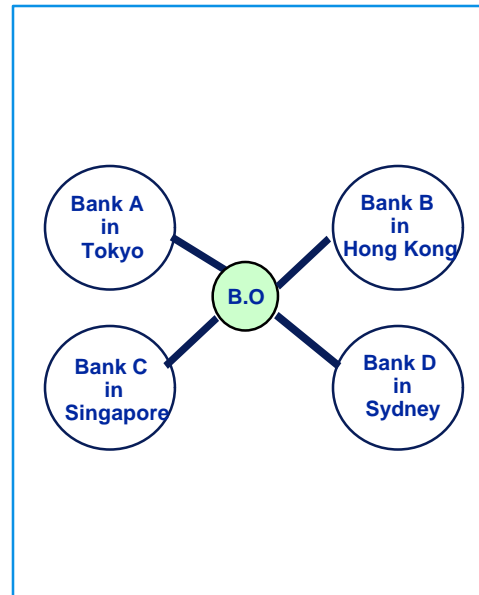
Consolidation Model

1. Each bank has its own shared processing capability.



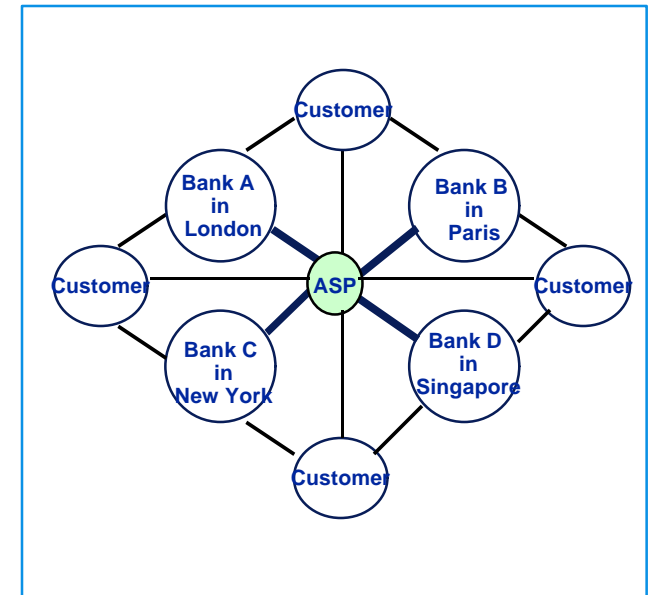
Third Party Back Office

2. Banks pool resources and share processing capability.



Application Service Provider

3. Banks use internet to outsource back-office processing.



With increasing standardisation in back-office processing, messaging standards, CBR¹ and communication technology, back-office processing in capital markets will evolve towards a TFM² type global utility - GSTPA.

1. CBR is case-based reasoning which uses artificial intelligence to route inquiries in call centre technology

2. TFM is the Transaction Flow Monitor being built by GSTPA in Switzerland to handle cross-border securities transactions.

The Consolidation/Insourcing Model

Characteristics

- ❑ most common model : RPCs
- ❑ Approaches :
 - consolidate first then STP
 - STP branch first then fold in other branches
- ❑ economies of scale can reduce cost by up to 50%
- ❑ improves efficiency by standardizing processes/system across geography and products
- ❑ consolidates operational risks - more effective control
- ❑ creates a deep pool of in-house expertise in back-office function

Consolidation is an immediately achievable first step, but is not an enduring model because further cost and operational efficiencies can be garnered from improvements in back office technology.

Third-Party Back-office Model (Outsourcing)

Characteristics

- ❑ already a few providers, but mostly in the securities industry rather than in foreign exchange
- ❑ achieves economies of scale through collective volume
- ❑ eliminates IT infrastructure investment and maintenance costs : replaces fixed cost with variable cost
- ❑ regulatory obstacles may need to be dealt with in terms of contractual liability of third-party provider, confidentiality, etc.
- ❑ middleware is a key enabler
- ❑ “Universal / Generic Financial Protocols” - FIX, XML, SWIFT

The way of the future - Internet-based back-office processing utility.

Application Service Provider

Characteristics

- ❑ some vendors are beginning to offer outsourcing on ASP
- ❑ web-enabled technology providing e-FX Internet delivery, with plug-and-play flexibility
- ❑ high volume, commoditised and mature products
- ❑ no more maintenance of applications - effectively, portalised outsourcing for applications management
- ❑ more efficient IT cost management, which is one of the most intractable costs in capital markets operations

Some challenges

- ❑ Standards for processing protocols (e.g. information capture, confirmations, settlements) in the industry
- ❑ Business issues - vested interest of participants
- ❑ Technology issues - electronic trading, internet, WAP
- ❑ Legal, regulatory and control issues
- ❑ STP - is this really achievable or is it just glorified automation
- ❑ What is the business case - Pricing issues relating to trade processing
- ❑ Ownership model for processing entities