



HONG KONG MONETARY AUTHORITY
香港金融管理局



Sophistications in RTGS systems in Hong Kong

Ms Haster Tang
Payment Systems Operation Division
Hong Kong Monetary Authority

HONG
KONG



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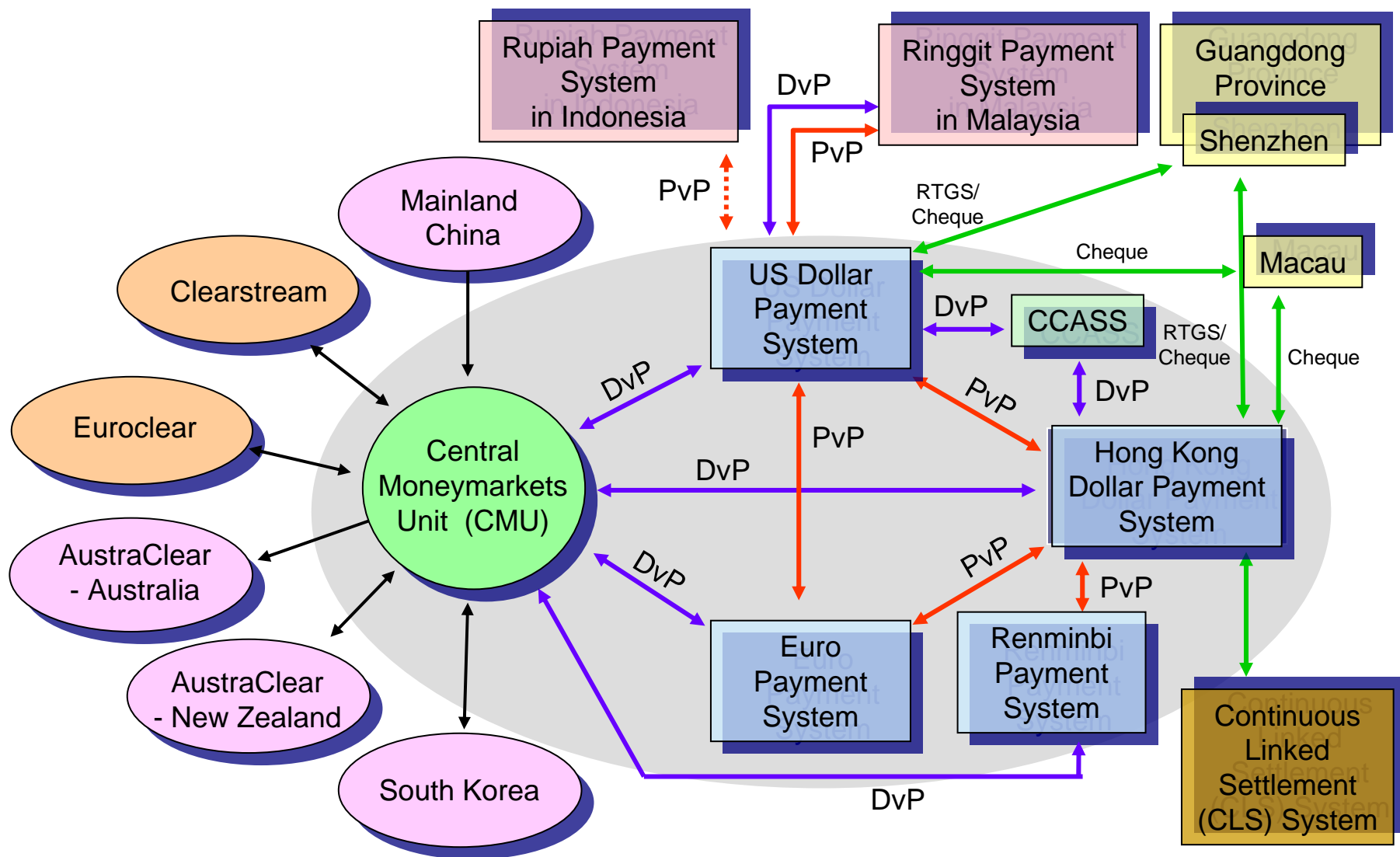
Overview

Overview of financial infrastructure
in Hong Kong

Case study 1 : Mitigating Herstatt risk by CCPMP

Case study 2: Improving settlement efficiency by
liquidity optimiser

Overview of payment and settlement infrastructure in Hong Kong



↔ **Cross-border bond settlement link**
↔ **Cross-border payment link**
↔ **DvP: Delivery vs. Payment**
↔ **PvP: Payment vs. Payment**

CMU – Settlement system for bonds

CCASS – Settlement system for shares

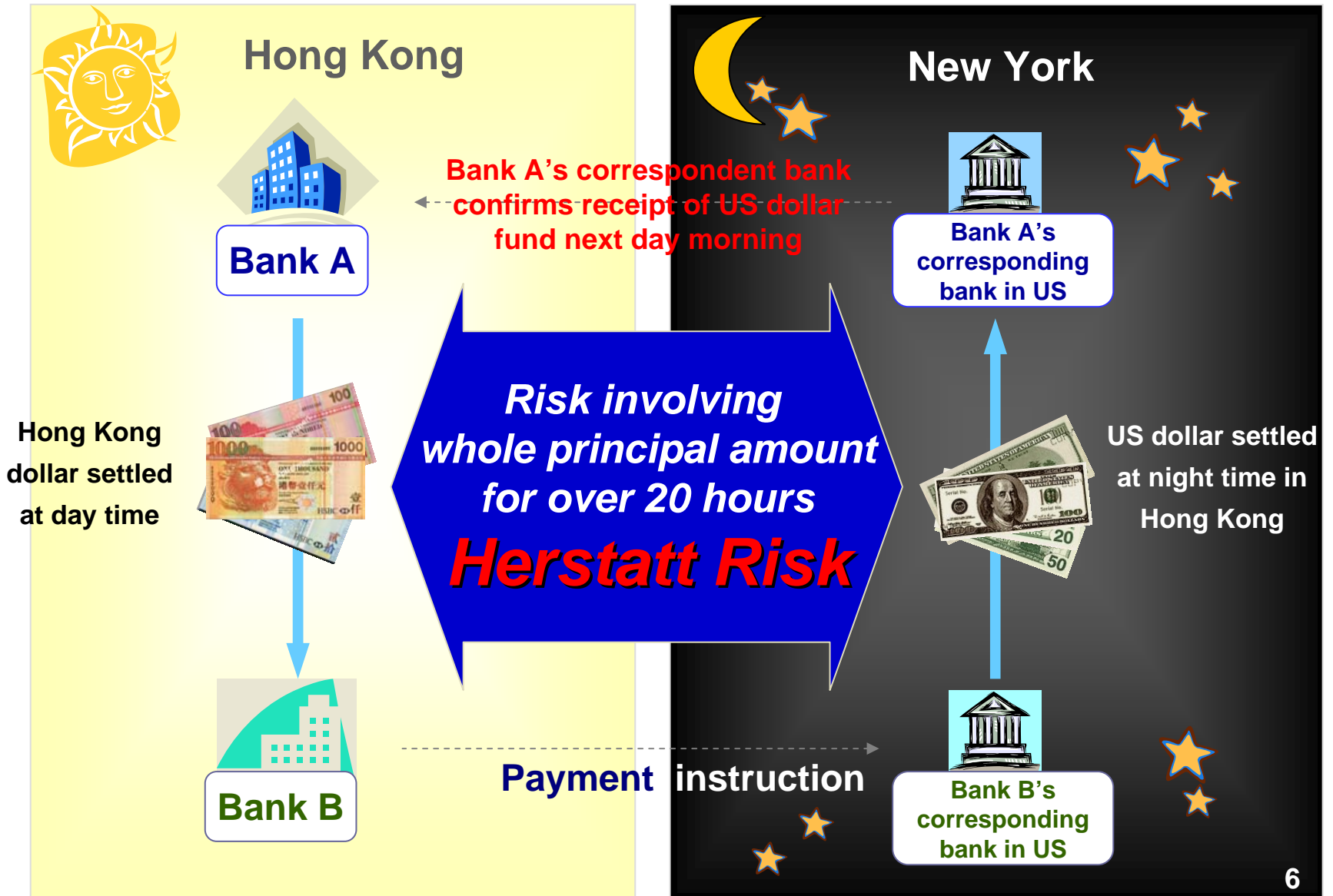


How RTGS sophistications help
reduce settlement risks and
enhance settlement efficiency?

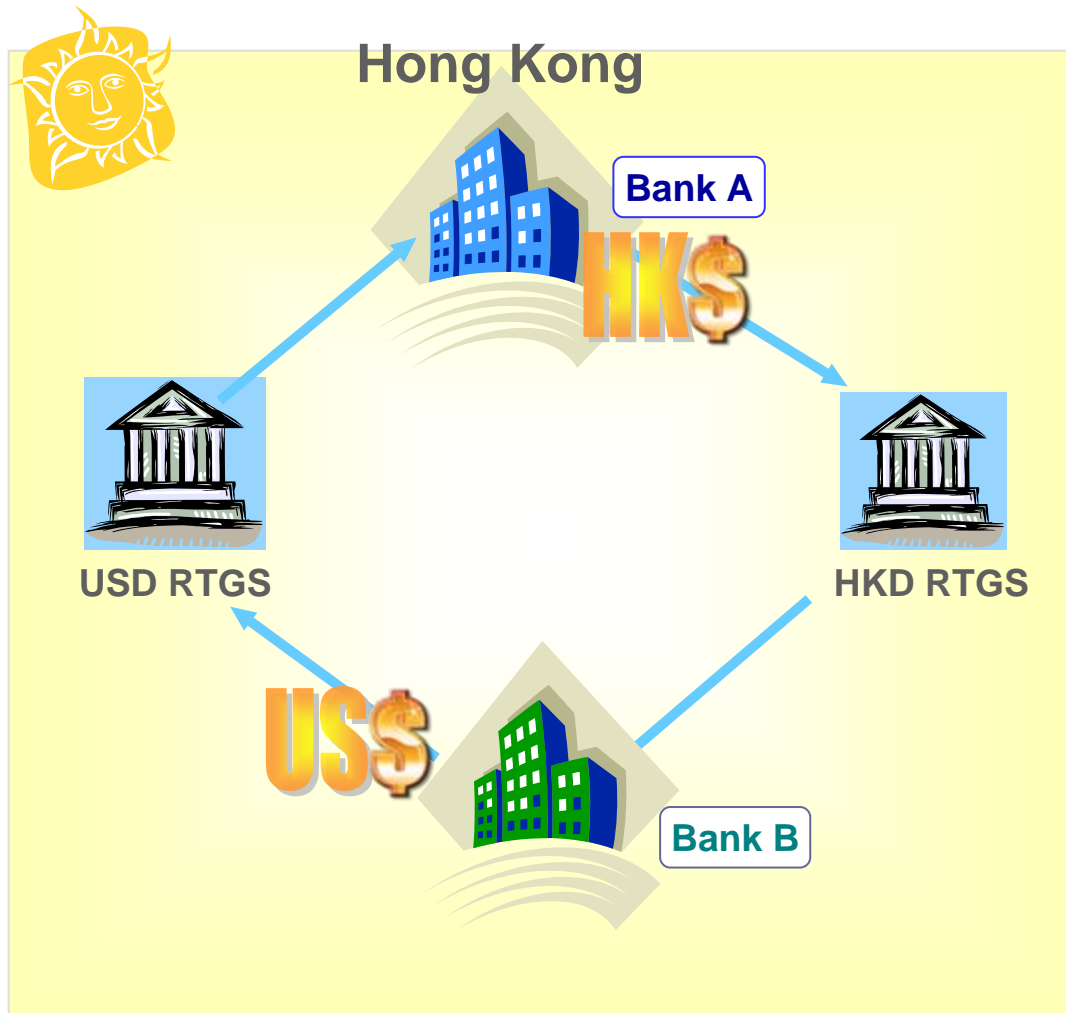
Case study 1

Mitigating Herstatt Risk by PvP via CCPMP

Issue - Herstatt Risk

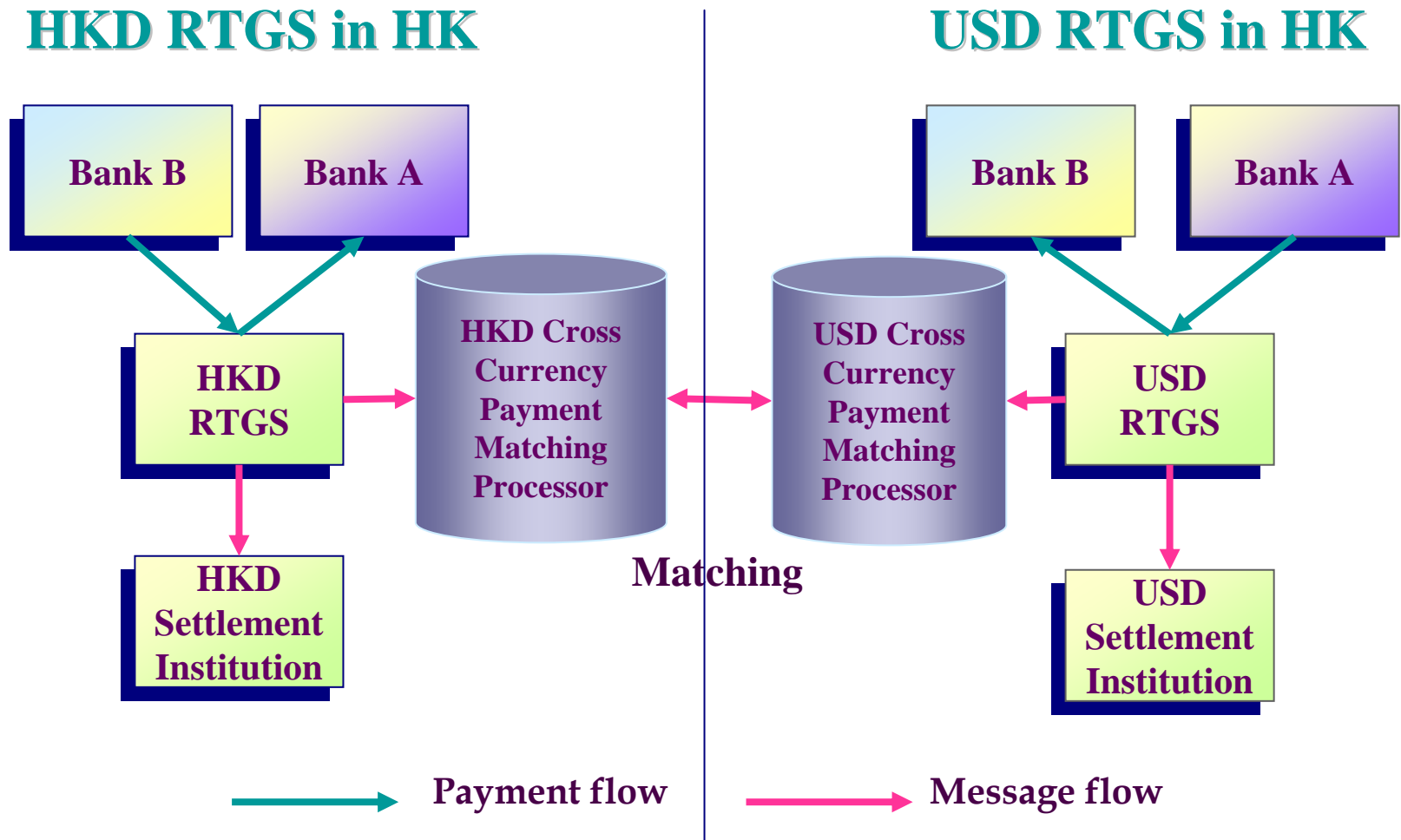


Solution - PvP settlement for FX transactions

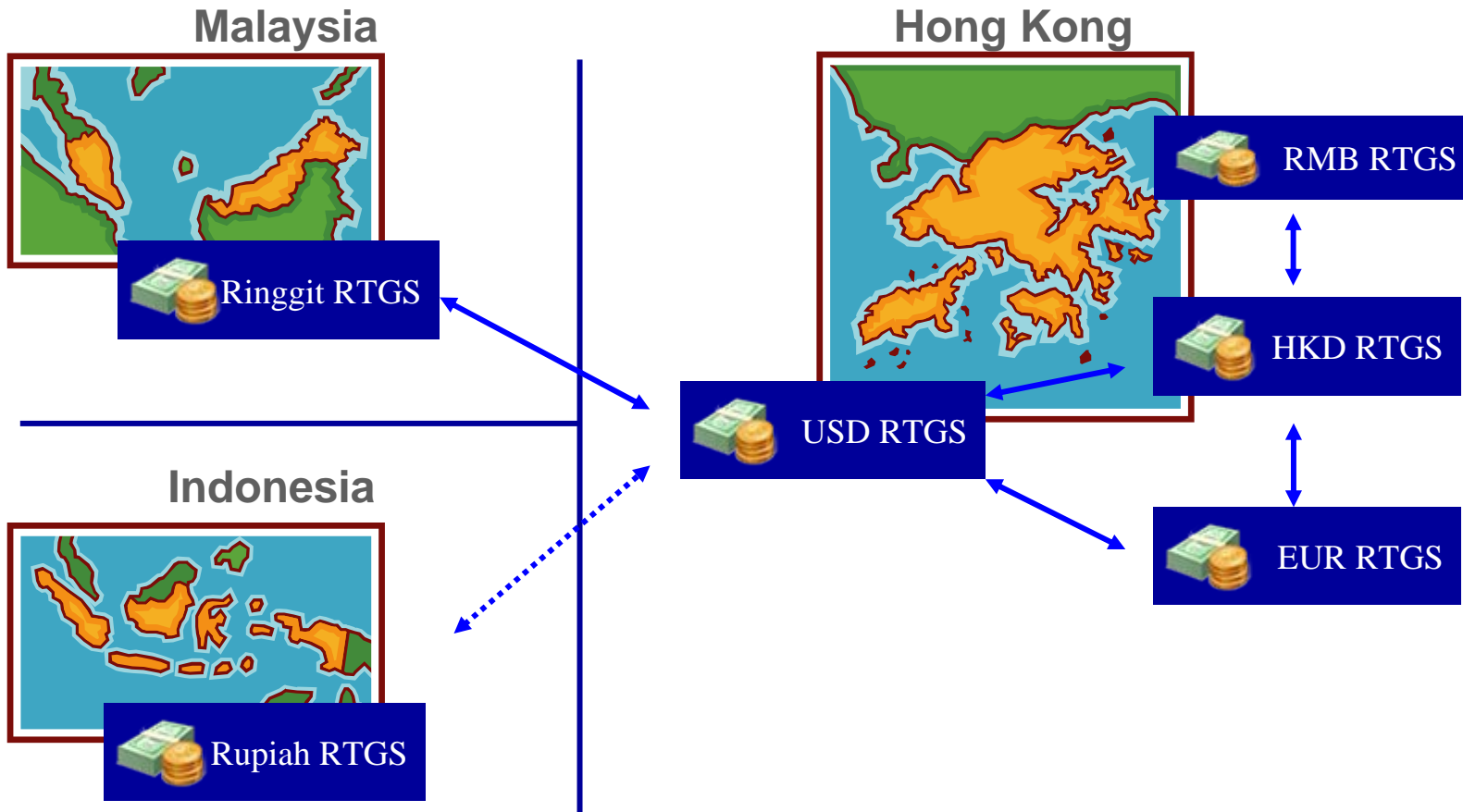


- To mitigate Herstatt risk, the two currency legs should be settled simultaneously i.e. Payment-versus-payment (PvP)
- How to ensure the simultaneity?

Implementation – PvP mechanism using Cross currency payment matching processor (CCPMP)



Linkages using CCPMP technology



= Real Time Gross Settlement System

↔ = Payment-versus-payment link

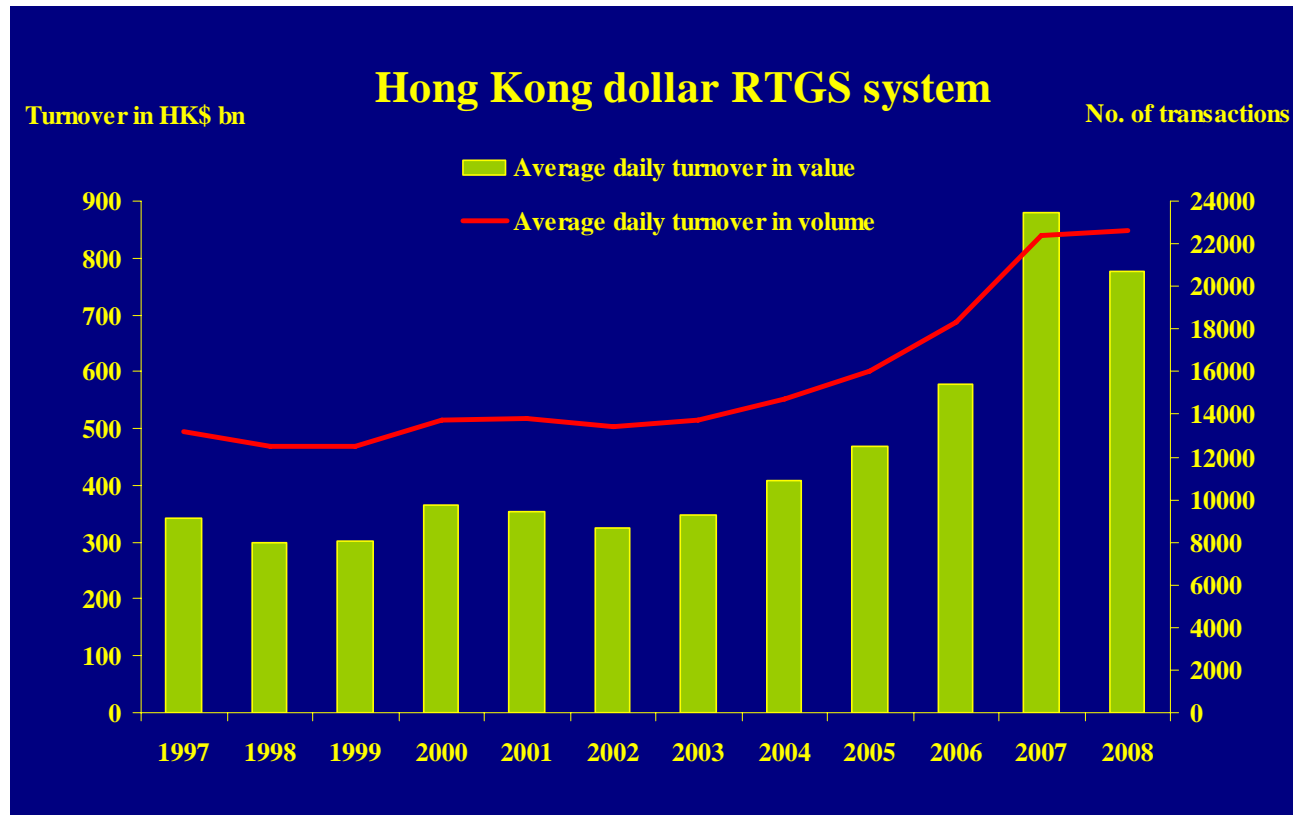
⋯↔ = Link under construction



Case study 2

Improving Settlement Efficiency by Liquidity Optimiser

Issue – Pressure to increase turnover efficiency



- Turnover of HK dollar RTGS system more than doubled (+127%) from 1997 to 2008
- Highest turnover in a day: HK\$1.7 trillion (US\$ 214 bn eqv) [5 Nov 2007 – refund day of Alibaba.com IPO]
- Need to find ways to use interbank liquidity more efficiently (i.e. a given amount of liquidity in the RTGS to support more interbank transfer)

Solution – Multilateral offsetting

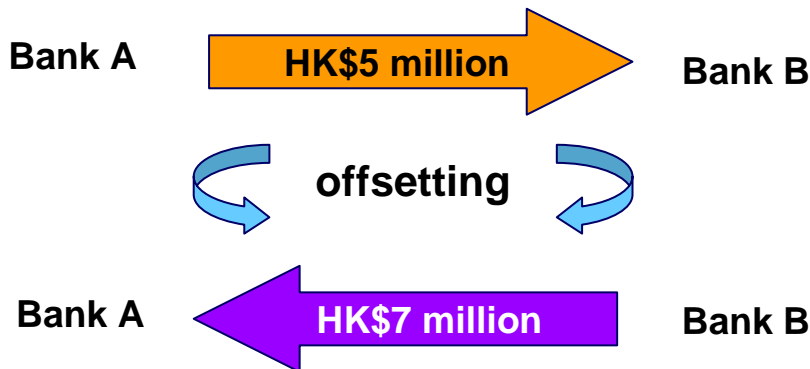
Payment instructions queued in RTGS system

| | |
|-----------|---------------------------------------|
| Payment 1 | Bank A to pay HK\$5 million to Bank B |
| Payment 2 | Bank B to pay HK\$7 million to Bank A |

Without multilateral offsetting

- Bank A needs HK\$5 million and Bank B needs HK\$7 million to settle the two payment instructions separately

With multilateral offsetting



Liquidity needed to settle the two payments

Bank A : 0

Bank B : HK\$2 million

Implementation – RTGS Liquidity Optimiser (RLO)

The mechanism is made possible by implementing a multilateral offsetting feature with sophisticated queue management algorithm in the RTGS system,

gaining the advantages of ...

the instantaneous settlement finality of the RTGS

+

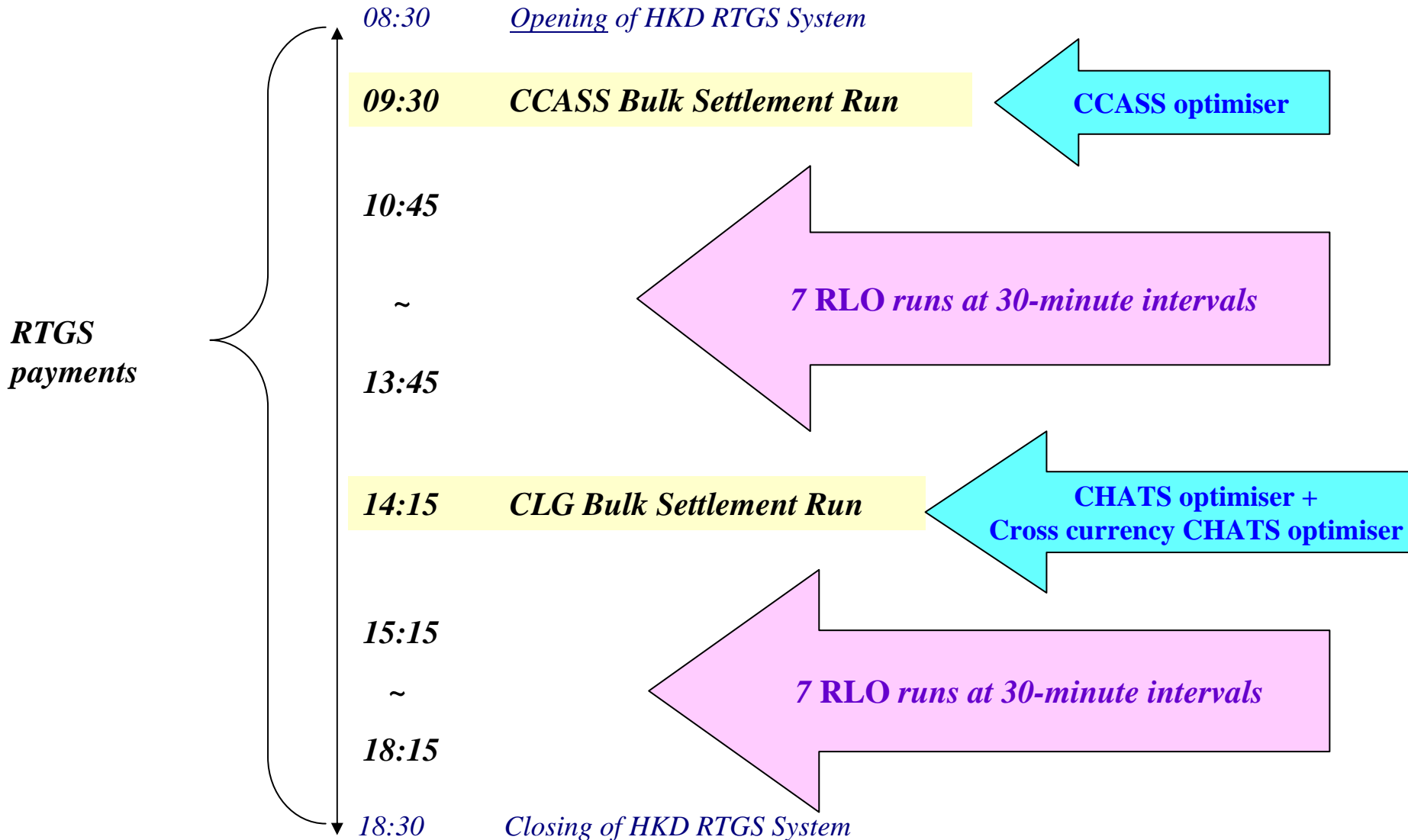
the liquidity efficiency of net settlement system

Benefits of Implementation – RTGS Liquidity Optimiser (RLO)

The mechanism serves :

- To optimize the use of the liquidity in the RTGS system to settle as many as possible payments that have been posted in the queue, thereby avoiding any possible payment gridlocks
- To help bank users to minimize the amount of liquidity keeping in the system, thereby saving the cost of funding

Various Optimisers implemented in Hong Kong



CCASS Bulk Settlement Run – for the money settlement of stock market transactions presented on the previous day
 CLG Bulk Settlement Run – for the settlement of cheques presented on the previous day



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Thank you

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