



BANK OF JAPAN



11th Payment and Settlement System Simulation Seminar and Workshop

The effects of settlement methods on liquidity needs

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Motivation

- Liquidity risk appears as settlement failure.
- Settlement risk management led to global spread of RTGS.
- Cash saving motivation created hybrid (liquidity saving) RTGS with queue and multi/bilateral netting.
- Measure the effect of hybrid RTGS and expansion of its coverage.

Expansion of Hybrid-RTGS

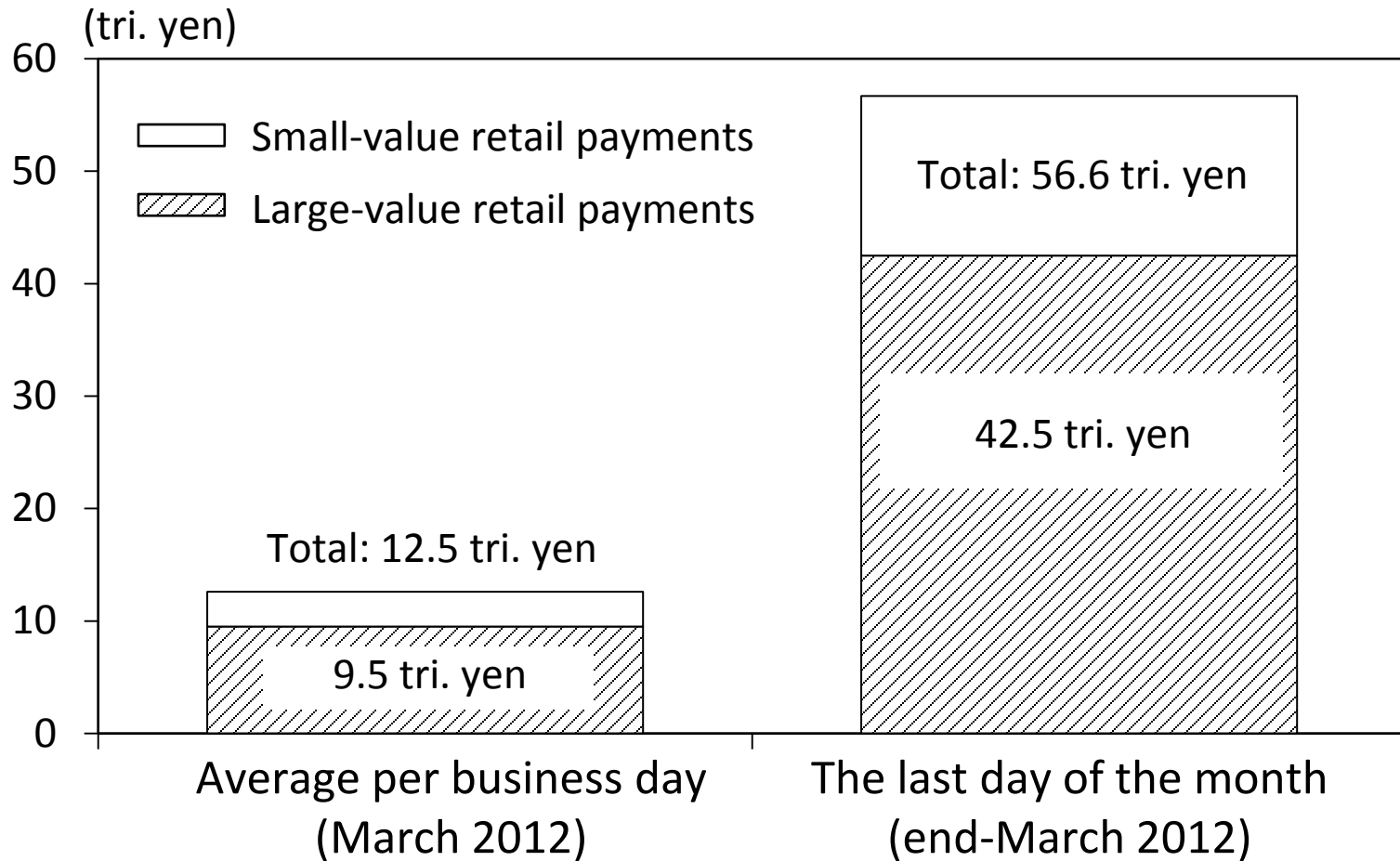
2 Step RTGS-XG project (XG: neXt Generation)

	Before RTGS-XG	After Phase 1	After Phase 2
Money market payments	RTGS since 2001	RTGS with LSF since Oct. 2008	RTGS with LSF since Nov. 2011
FX payments (yen side)	DNS		
Large-value retail payments		DNS	

Retail payment system in Japan

- Run by private association, Zengin Net (Japanese Bank's Payment Clearing Network).
- Clearing system (CCP) to net out fund transfers among member banks.
- It was a pure DNS system and member banks used BOJ-NET to settle the netted payment obligation.
- Large value payments over 100 mil yen shifted to hybrid RTGS using BOJ-NET in RTGS-XG project phase 2.
- Small value payments still under DNS.

Value of the retail payments



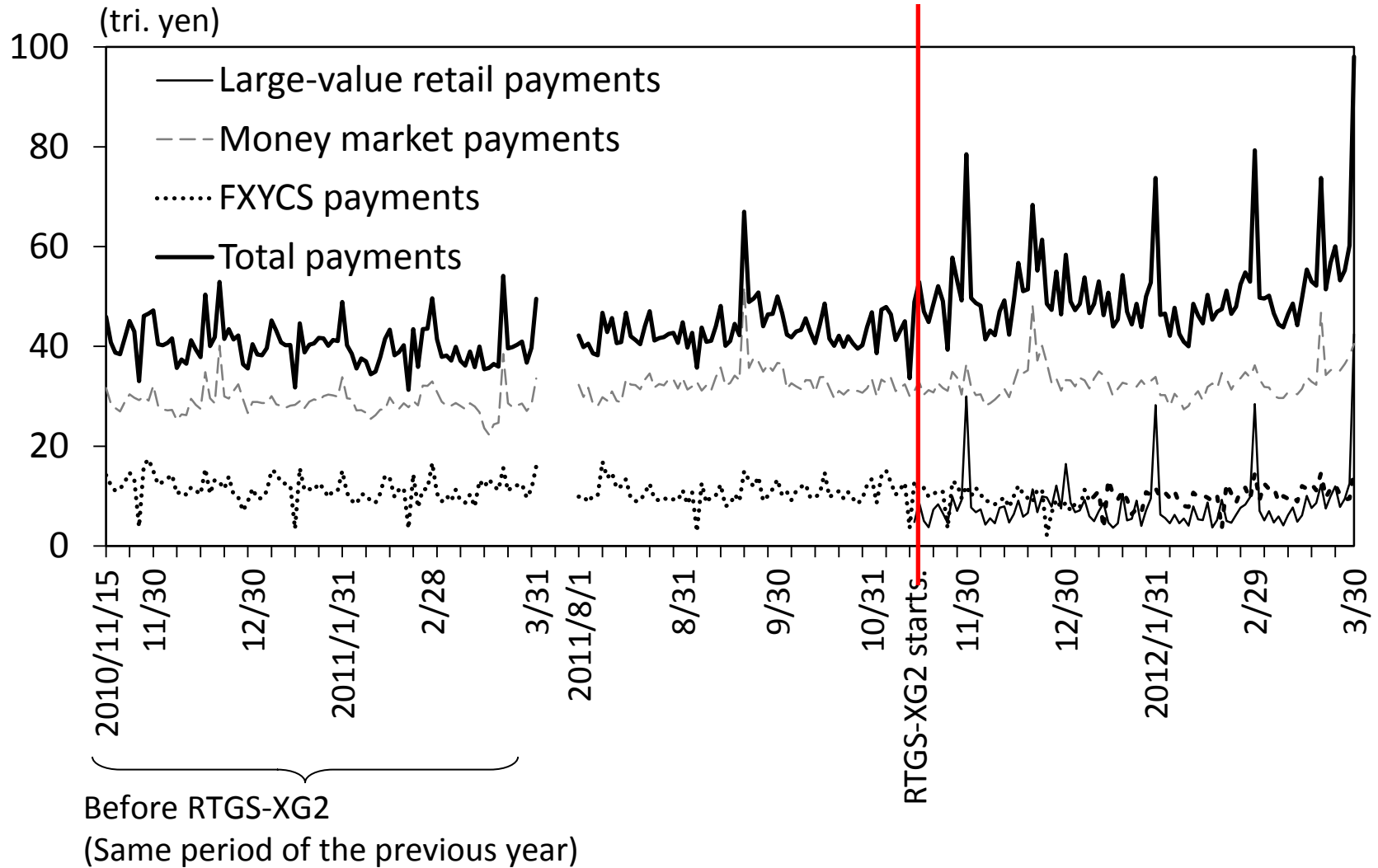
Increase of liquidity demand by the move from DNS to hybrid RTGS

Daily ave. (tri.yen)	Transaction	Settlement	DNS netting (Settlement/Transaction)
Oct. 2011	10.3	2.2	21%
Dec. 2011	11.0	(8.5)	(77%)
Large value	7.7	(7.7)	----
Small value	3.3	0.8	25%

Note

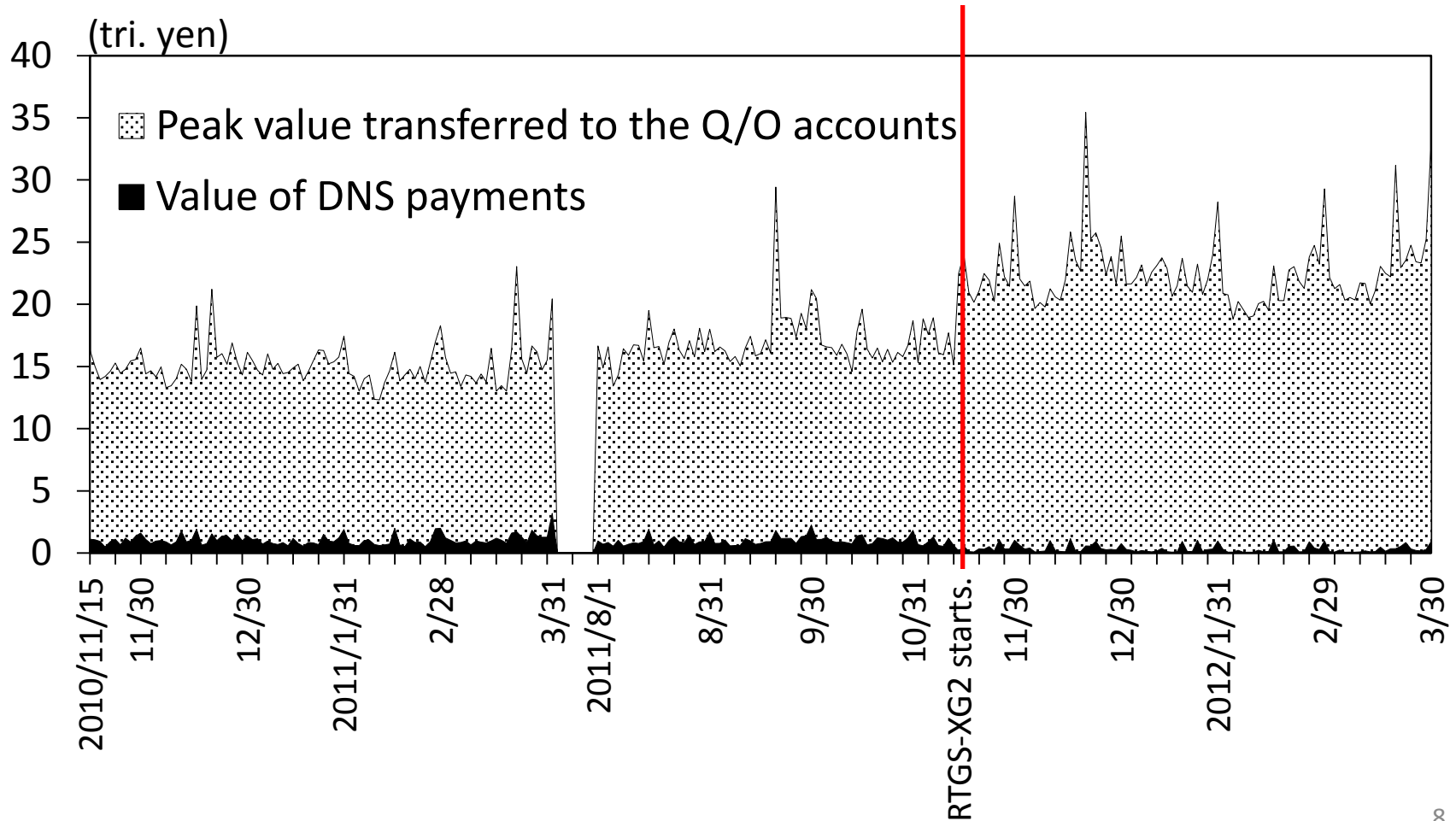
- 1) Assumption of No liquidity saving in large value payment.
- 2) November figures were mixed of DNS and hybrid RTGS due to mid-month movement.

Developments of payment value

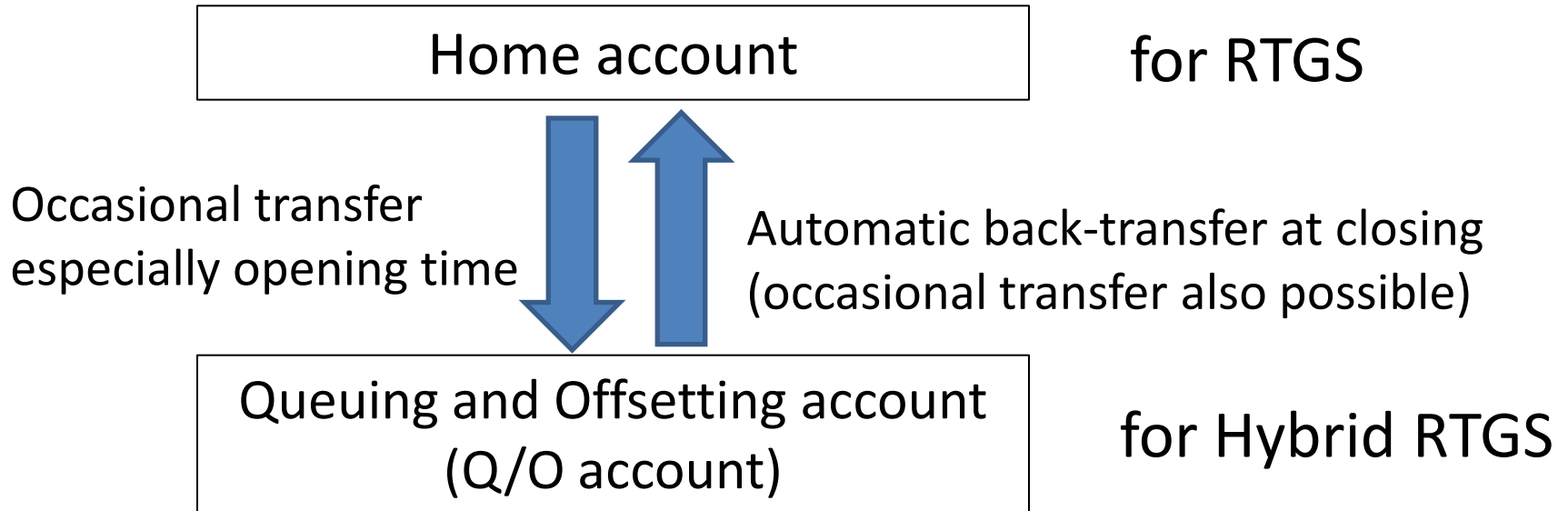


Simple outcome of the XG project

- Increase in liquidity demand for settlement
- Improvement of settlement risk

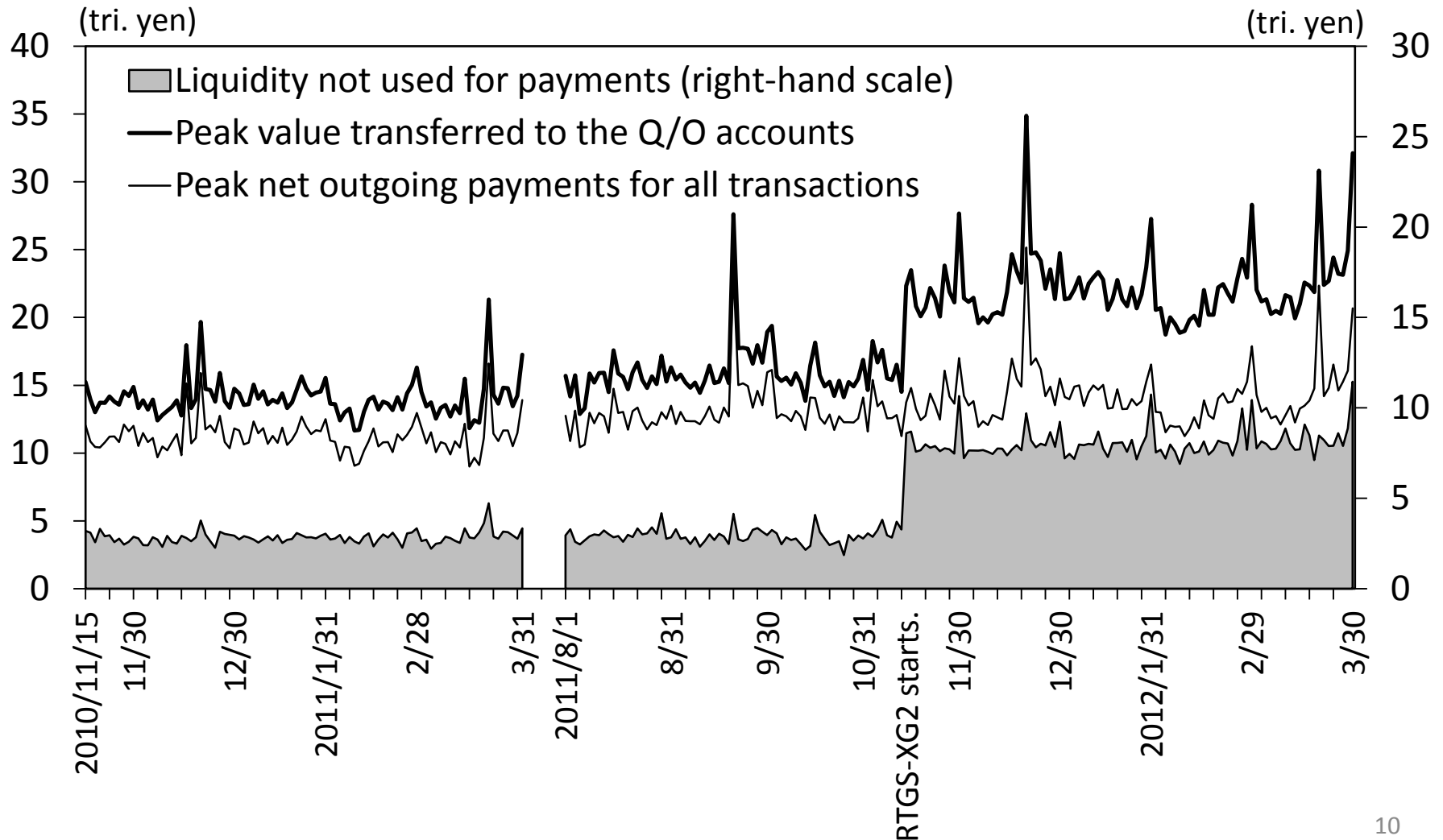


Two accounts in BOJ-NET



Q/O account was introduced at the XG project phase 1 for the hybrid RTGS of money market and FX payment.

Peak outstanding of Q/O account v.s. Minimum value to clear intraday peak



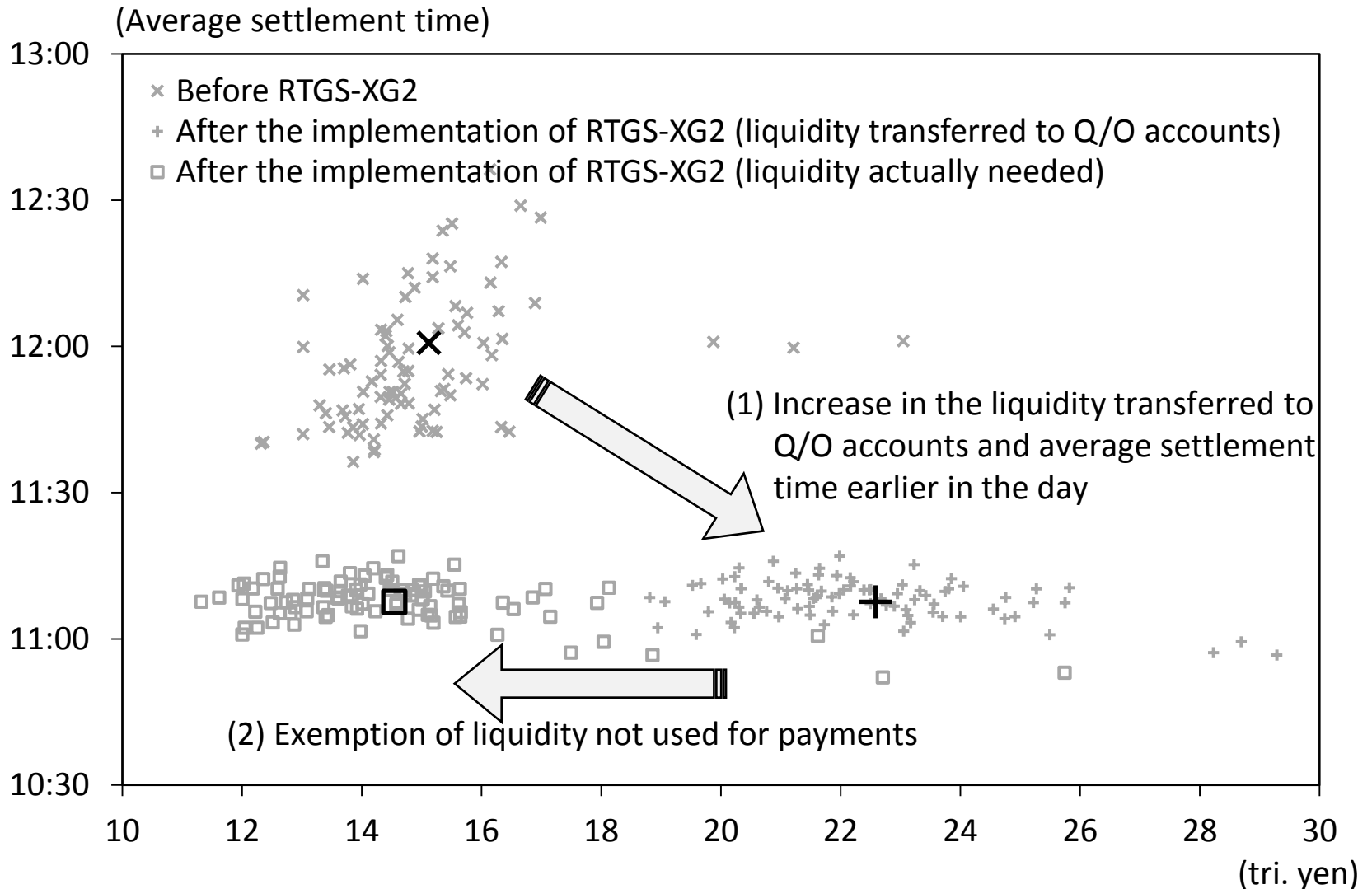
Why so large liquidity in Q/O

- Accommodative monetary policy reduced cash holding cost in BOJ account.
- ➔ Weak incentive to control cash for settlement

Incidental problem

- Difficulty to measure liquidity saving effect
- Use hypothetical value, e.g. minimum value to clear intraday peak in realized payments

Potential of the LSF (Tradeoff → better-off)



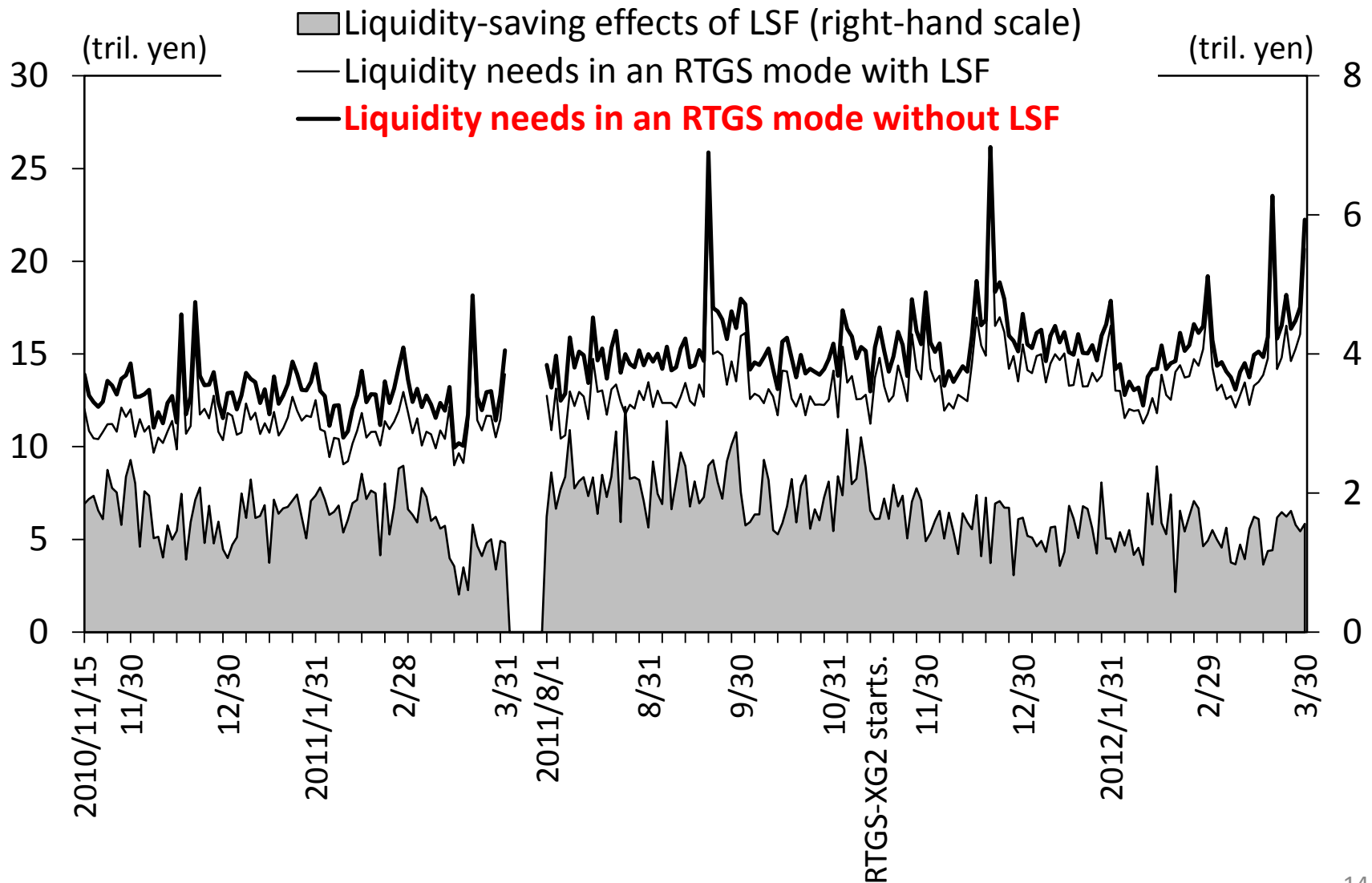
Sources of liquidity saving

1. Liquidity saving features (LSF) in BOJ-NET
2. Expansion of hybrid RTGS

➔ Measure the effects by hypothetical values

- Peak value under pure RTGS is estimated by sending time of payment instruction, while the value in hybrid RTGS is measured by settlement time.
- Sum of peak values separately measured in 1) money market, 2) FX, and 3) Large value retail payments

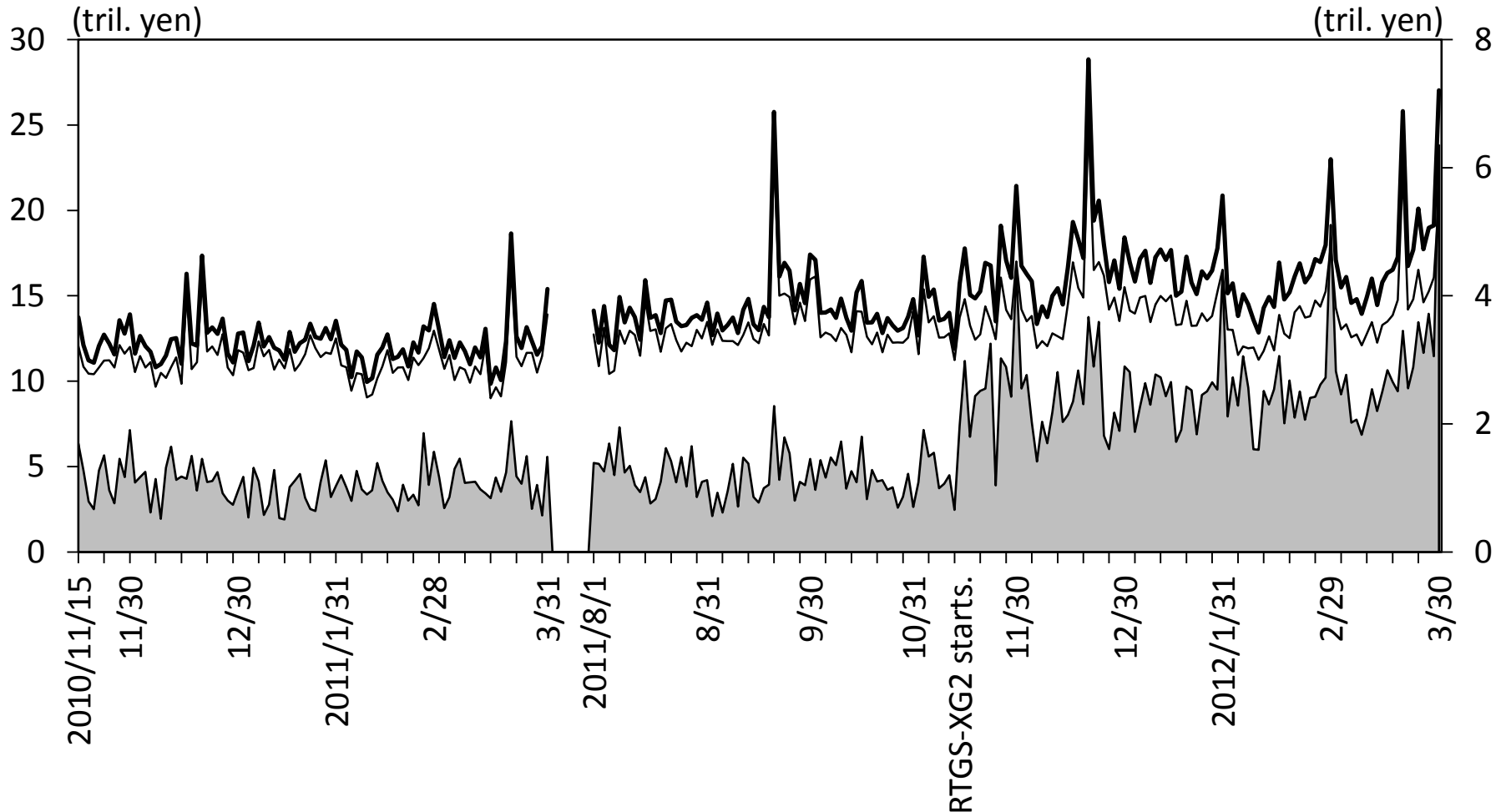
1. Direct effect of the LSF



2. Expansion of hybrid RTGS

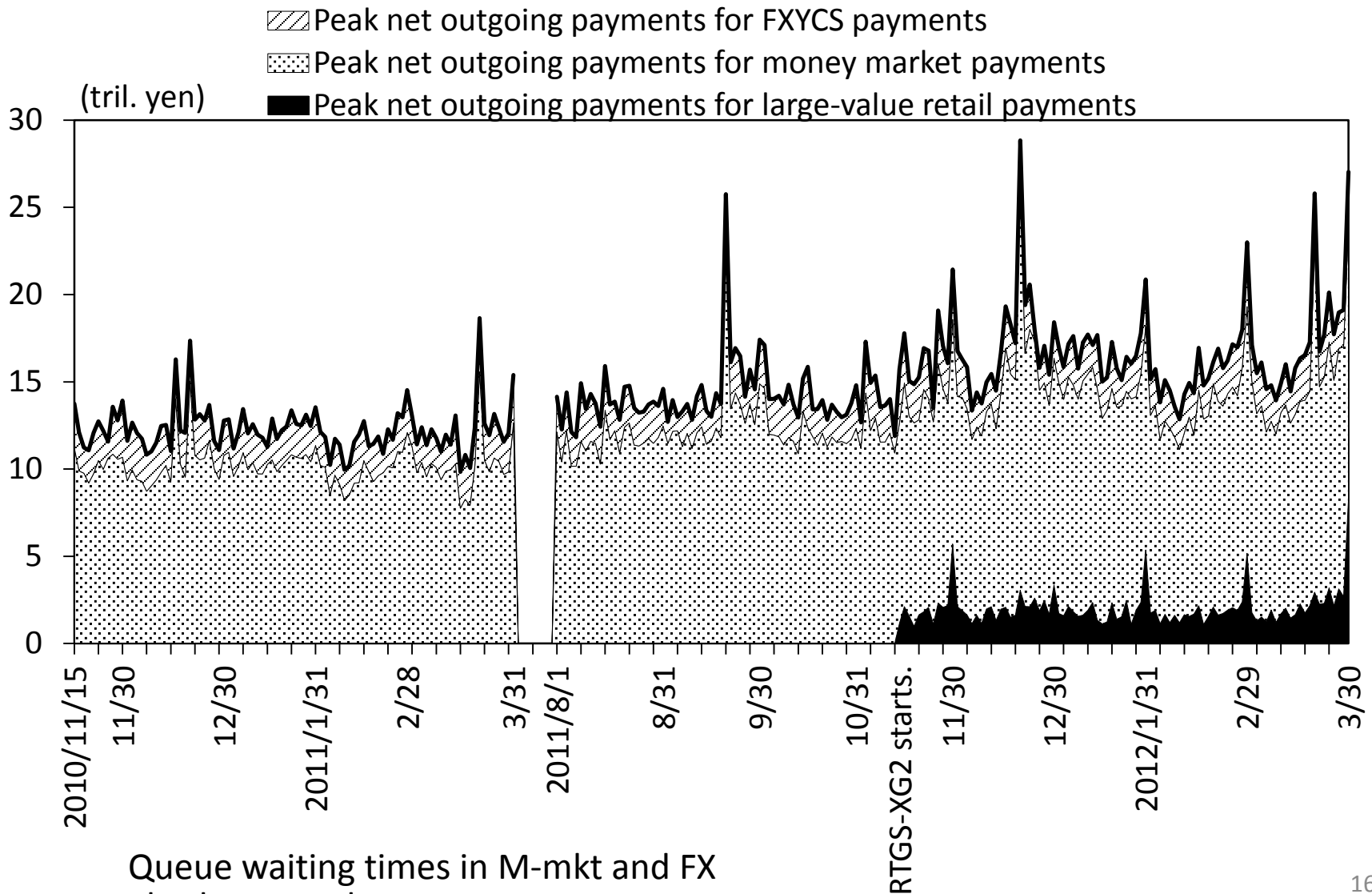
Hypothetical value: Sum of min value to clear three types of payments

- 1. Money market, 2. FX, 3. Large value retail payment



Small has a large saving potential

via Bi/Multilateral netting

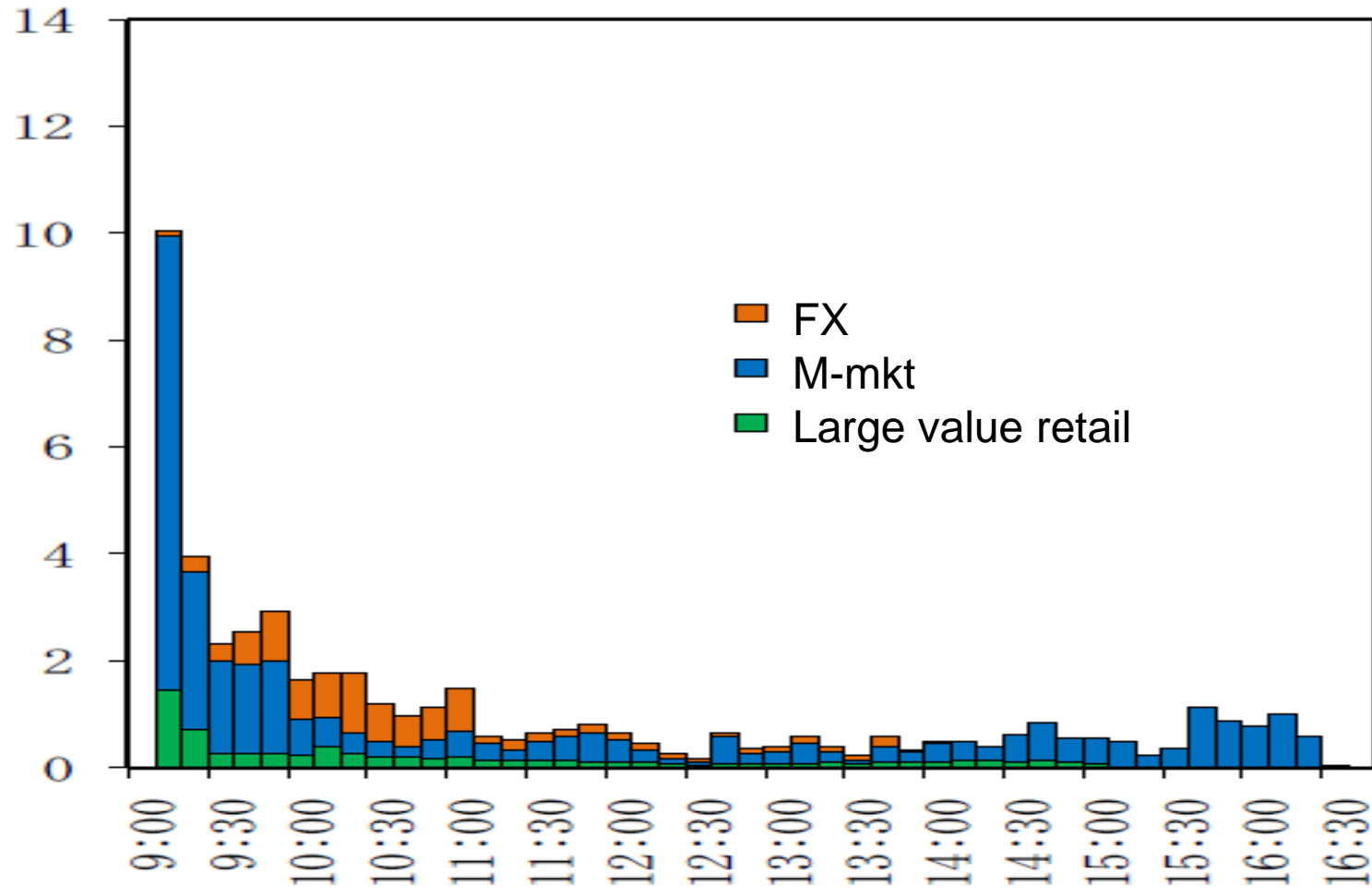


Queue waiting times in M-mkt and FX also became shorter.

Market practices affects the saving

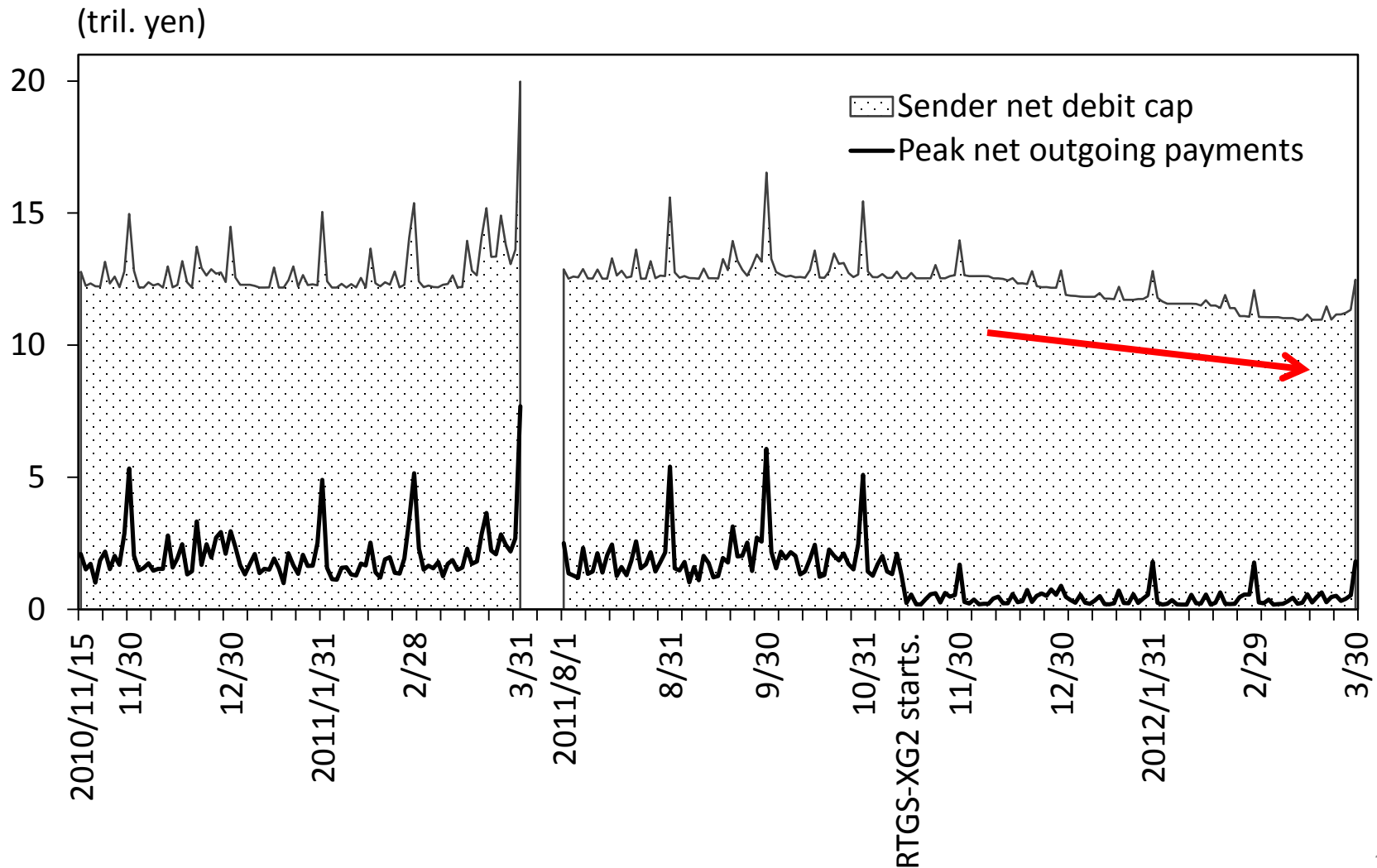
- Repayment-first rule (M-mkt) 9-10am
 - Gap of receive/send increases liquidity demand.
- Payment time guideline (FX) before 11am
 - Simultaneous receive/send
- One hour rule for fund transfer (Retail)
 - M-mkt and large retail payment concentrate in the same time zone, morning period.

Intraday pattern



Reduction of collateral cost in DNS

Zengin Net of cash CCP imposes net debit cap to cover counterparty risk.



Summary

- Expansion of hybrid RTGS resulted in higher demand for liquidity. Trade-off b/w safety & cost
- Much of the liquidity was not used for settlement.
--> Potential for better-off
- Observe liquidity saving effects even under BOJ's accommodative monetary policy.
 - Due to 1) the LSF and 2) expansion of hybrid RTGS coverage. Market practices enhance them.
- Remaining DNS system gains via decline in collateral; another cost saving.