


Entering the Euro Zone

Pierre WILLEMS – Head of Local Clearing & Custody Product

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1



Agenda

- ◆ **Euro conversion key-issues**
 - ❖ Changeover Week-end
 - ❖ Redenomination
 - ❖ Conversion of cash accounts
 - ❖ Stock Exchanges
 - ❖ Corporate Events
- ◆ **Euro post implementation: some lessons**
 - ❖ General lessons at industry level
 - ❖ Critical success factors from a custodian perspective
- ◆ **Appendices**

2

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Transition period

OFFICIAL CURRENCY IS EURO

- European Monetary Policy
- Capital Markets
- Wholesale payment systems

•List of "IN" countries

Greece joins in

Switch to Euro coins and notes

Withdrawal of local coins and notes

1/1/1998 1/1/1999 1/1/2001 1/1/2002 1/7/2002

3 YEAR TRANSITION PERIOD

- ◆ No compulsion – No prohibition
- ◆ Starts with a Big Bang

Banks have an obligation of Euro readiness from Day 1. This means

- . Being prepared for a Big Bang migration
- . Having developed a dual currency operating model

3

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Changeover Week-end

Date	Currency	Activity
29 Dec 1998	Local	Trading as normal
30 Dec 1998	Local	Trading as normal, Exchanges close end-of-day
31 Dec 1998	Local	Stock Exchanges closed. OTC Markets open, NCBS and Clearing systems open (Exception : Germany) Fixing of conversion rates
1 Jan 1999		Changeover weekend
2 Jan 1999		Changeover Weekend
3 Jan 1999		Changeover Weekend
4 Jan 1999	Euro	Trading in Euro

Weekend Key Events

- ❖ Conversion of cash accounts and balances
- ❖ Redenomination of securities
- ❖ Conversion of outstanding trades

4




Redenomination

Most critical issue of the migration

Associated complexities and risks are numerous:

- ◆ Some technical details could be released late
- ◆ Systems must be able to manage different methods
- ◆ Firm positions and pending trades are impacted
- ◆ Can generate “Devil in the details” type of issues:
 - ✦ Rounding errors on pending trades (bottom-up method)
 - ✦ Differences on omnibus accounts (position in omnibus account different from the sum of the individual client accounts)
- ◆ Main event of the changeover week-end but also an ongoing process for the rest of the conversion period

5




Bond redenomination

Bottom-up (client position) method, to one cent

- ◆ Starts at the level of each account position.
- ◆ Position is converted at the official conversion rate
- ◆ Nominal amount is then rounded, on a commercial basis to two decimals, or euro cents, to reach a rounded holding

Holding position :	DEM 100,000,000
Conversion rate DEM/euro :	1,95583 (six digits)
Redenominated holding (unrounded):	100,000,000/1.95583 = euro 51,129,188.11962
Rounded holding:	Euro 51,129,188.12 (commercial rounding at the third decimal)
Rounding error:	Euro 0.0004 (euro 0.12000 -0.11962)


6









Bond redenomination
Top-down (minimum lot) method

- ◆ Method applies the conversion bond by bond
- ◆ The issued bond is sub-divided into the minimum lot
- ◆ Minimum lot is converted and rounded to two decimals
- ◆ Result is multiplied by the original number of units to obtain new euro position

Holding position :	ITL 100,000,000
Minimum lot :	ITL 5,000,000
Number of lots:	20
Conversion rate ITL / Euro:	1936.27 (six digits)
New nominal:	$5,000,000 / 1,936.27 = \text{euro } 2,582.28450$
Rounded amount:	Euro 2,582,28
Rounding error:	Euro 0.0045 (0.00450 rounded)
New holding:	$2,582,28 * 20 \text{ lots} = \text{euro } 51,645.60$
Rounding error per position:	Euro 0.09 (0.0045 euro*20 lots)




Redenomination method by country

France	Germany	Italy	Spain	Belgium	Greece
					
Bottom-up One Euro Cash compensation*	Bottom-up One Cent	Top-down One Cent	Bottom-up One Cent	Bottom-up One Cent	Bottom-up One Cent

* Example in the Appendices

8




Equity Redenomination
"No Par Value"

- ◆ The stock capital of the company is converted into euro
- ◆ The result, rounded to the cent and divided by the number of shares gives the "theoretical" value of each share (theoretical because it consists of five decimal digits).
- ◆ Each share represents a percentage of the outstanding capital.

Conversion process	No par value
Stock capital	DEM 100,000,000
Nominal value	DEM 50
No. of shares	2,000,000
Conversion rate	DEM/euro 1.95583
Converted capital	Euro 51,129,188.12
No par value share	Euro 25.56459 (no rounding)

Most pragmatic solution. No need for a change in the stock capital. Chosen by vast majority of corporates in first wave countries

9




Equity Redenomination
Change the nominal Par Value

- ◆ The nominal value of the share is converted. Result is rounded. The extent of the rounding (Two decimals or whole euro) is reflected in changes to the stock capital of the company
 - ❖ Broken euro (nominal value rounded to the cent): impact on capital is minimal.
 - ❖ Round euro (nominal value rounded to a whole euro): impact on capital is greater. Round euro nominal values could be achieved by stock grouping operations (eg rounding to euro 27 and grouping 10 shares for 9 new shares would give a new par value of euro 30)

Conversion process	Par value (broken euro)	Par value (round euro)
Stock capital	DEM 100,000,000	DEM 100,000,000
Nominal value	DEM 50	DEM 50
No. of shares	2,000,000	2,000,000
Conversion rate	DEM/euro 1.87222 *	DEM/euro 1.87222 *
Converted par value	Euro 26.70626	Euro 26.70626
Rounded par value	Euro 26.71	Euro 30
Change in value per share	Euro 0.00374	Euro 3.29374
Stock capital (converted)	Euro 53,420,000	Euro 60,000,000
Overall capital increase	Euro 7,480	Euro 6.587,480

* 98 example, not updated with official rates

10




Cash Conversion

- ◆ Conversion of client accounts and balances
 - ❖ Timing of conversion is a decision that belongs to clients
 - ❖ Nevertheless, most conversions concentrated on the week-end
 - ❖ Account structure and reporting on cash counter-values: area where banks can decide to be more or less flexible/creative
- ◆ National Central Banks (NCBs)
 - ❖ Convert all participants accounts into euro during Changeover week-end
 - ❖ Pay only in euro (ie participants receive only in euro)
 - ❖ In some instances (Germany and Italy), provide a converter facility and consequently accept to receive payments in local currency
- ◆ Dual currency communication
 - ❖ NCBs who provide a converter may make reference in their reporting to the local currency of the original cash instruction

Bulk of client account conversion intervenes during the Changeover weekend

11



Stock Exchanges

- ◆ Big Bang approach to avoid dual quotations
- ◆ Quotations
 - ❖ Euro only for Equities (number of decimals varying from 2 to 4 between markets)
 - ❖ Percentages for Bonds (no change)
- ◆ Trading
 - ❖ Strictly in euro for redenominated bonds
 - ❖ Non redenominated bonds: quantities in local currency, cash countervalues in euro
 - ❖ Equities: euro. For shares trading at low prices (down to individual cents), need for more than 2 decimals and potential modification of tick sizes.
 - ❖ Cancellation of open orders (entered but not executed)
- ◆ Clearing & Settlement
 - ❖ Exclusively euro
 - ❖ Conversion of executed orders

Need to increase number of decimals can be particularly relevant for currencies which have a low exchange rate to euro

12



Corporate Events

Coupons and Redemptions

- ◆ Redenominated Bonds: calculations and payments in euro
- ◆ Non-redenominated Bonds:
 - ❖ Two possible methods of interest coupon calculation
 - ❖ Interest payment received in euro by agent banks (from issuing agent or CSD) as interbank payment system works only in euro


Dividends

- ◆ Redenominated securities: companies announce and pay in euro
- ◆ Non-redenominated securities:
 - ❖ Announcement can be made in local currency
 - ❖ Cash receipts from the paying agent always in euro
 - ❖ Beneficiaries can ask for payment in local currency

Other Corporate Actions

- ◆ Little impact overall. Some country specificities.


13



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- ◆ **Euro post implementation: some lessons**
 - ❖ General lessons at industry level
 - ❖ Critical success factors from a custodian perspective
- ◆ **Appendices**


14



Industry overview

- ◆ Euro changeover overall went well
 - ❖ Changeover weekend itself was deemed a success
 - ❖ Lower level of failed trades in the first euro days
- ◆ Extensive preparation deemed as first success factor
 - ❖ Efficient exchange of information on euro implications
 - ❖ Involvement and control from senior management
 - ❖ Extensive testing, dress rehearsals
 - ❖ Close monitoring of external dependencies
- ◆ Activity over the conversion week-end kept to the minimum necessary
 - ❖ Not all securities were re-denominated
 - ❖ Trading volumes reduced in the run-up to the changeover weekend
- ◆ Good organisation and communication during the week-end is vital

15



Industry overview

- ◆ Complexity factors:
 - ❖ No unique redenomination method
 - ❖ Late release of definitive technical information on the changeover
 - ❖ No single authoritative source of information on redenomination
 - ❖ Initially, some notice periods for redenomination were too short (later standardisation on 30 day)
- ◆ Biggest issues were experienced on the TARGET start-up
 - ❖ Confusions on SSIs
 - ❖ Speedy reaction from the industry: Heathrow conventions on January 8.
 - ❖ Adjustment to those conventions took time (need for IT adjustments)

16

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17

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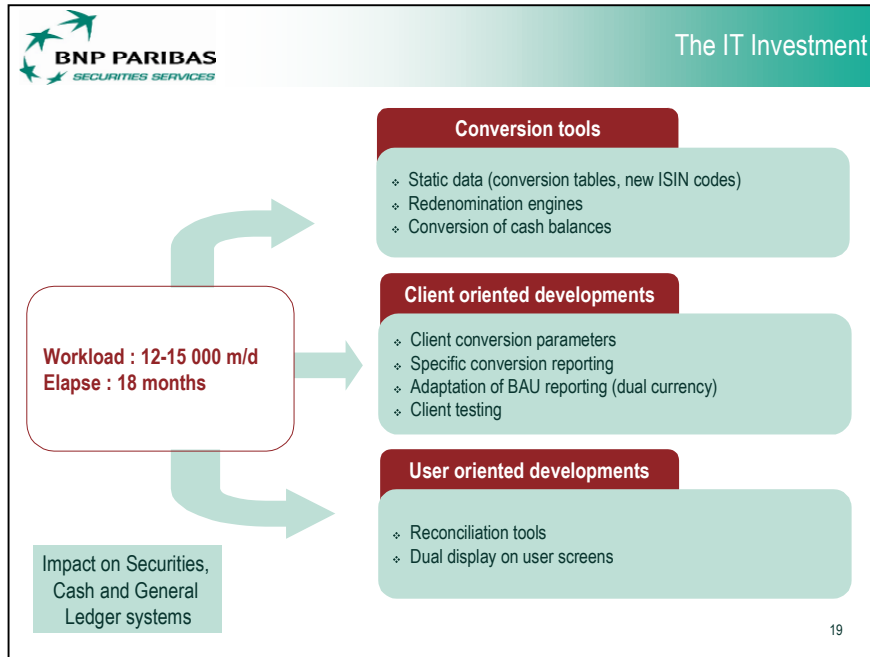
Client communication

What? How?

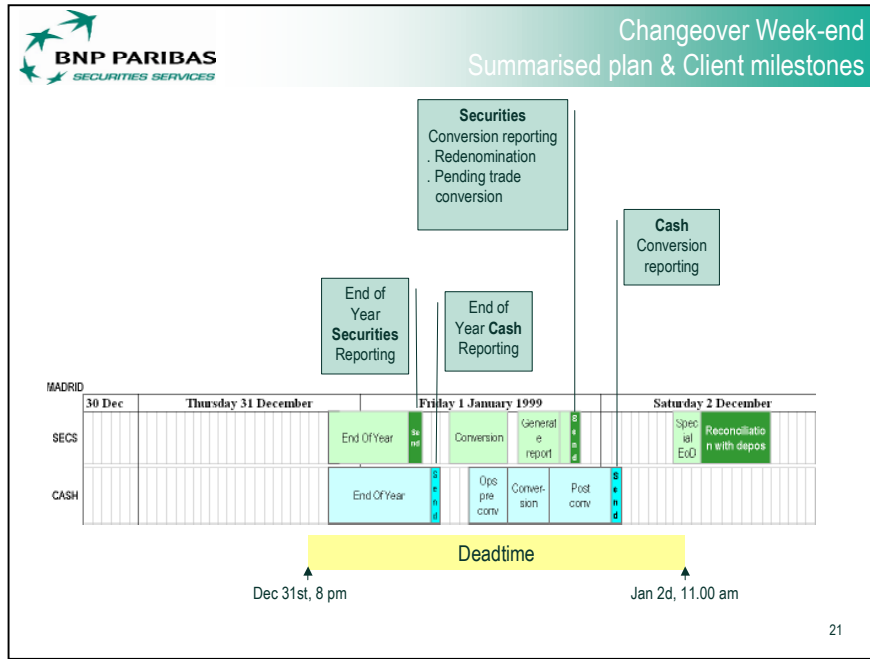
When?

Frequent and multi-media communication – Cost of “generic” Euro education should be lighter for second wave countries

18



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- The IT "Post Mortem"
- ◆ Business wise, not an overly complicated project
 - ◆ But, complexity stems from
 - ❖ Unmoveable deadline
 - ❖ Big Bang constraints
 - ❖ Magnitude of the impact in terms of applications and screens
 - ❖ Number of stakeholders to "align" (clients, counterparties, etc)
 - ◆ Critical Success Factors
 - ❖ Start early (two years in our experience)
 - ❖ Plan and pilot carefully (resources, risk indicators)
 - ❖ Perform client testing
 - ❖ Perform market testing
 - ❖ Some developments (mainly dual display) were not worth the investment
- Leverage Y2K experience (Big Bang)**
Flexibility is costly. Perform cost/benefit study on dual display developments.
- 20




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Changeover Week-end Plan and Milestones - Greece

Milestone	Type	Description	Status
DECEMBER 29TH, 2000			
A	Conversion Rates	Availability of the Conversion Rates	
B	BAU Reporting	End of year Securities Settled Trade Confirmations acknowledged	17:30 CET
C	IT	Start of Dead Time	18:30 CET
D	Control - Ops	Securities Reconciliation with The Bank of Greece - Greek Drachma Balances	21:30 CET
E	BAU Reporting	End of year Securities Pending Trades (MT 534/573)	22:00 CET
F	BAU Reporting	End of year Securities Statements (MT 571/572)	22:00 CET
G	BAU Reporting	End of year Cash Statement (MT 940/950)	22:00 CET
DECEMBER 30TH, 2000			
H	IT	End of Dead Time	07:00 CET
I	Conversion - IT	Launch cash conversion process	15:00 CET
J	Conversion - IT	Launch Security redenomination process	15:30 CET
K	Conversion - IT	Launch pending trade conversion process	16:00 CET
L	Control - IT & Ops	Securities Reconciliation with The Bank of Greece - Euro Balances	17:00 CET
M	Redenomination reporting	Redenomination Confirmation (MT 563)	18:00 CET
N	Redenomination reporting	Securities Holdings Statement (Euro MT 571)	18:00 CET
O	Redenomination reporting	Securities Pending Trade Statement (Euro MT 573)	18:00 CET
P	Cash conversion reporting	Legacy Cash Statements 1/1/2001 Zero Balance (MT 940/950)	18:00 CET
Q	Cash conversion reporting	Euro Cash Statements 1/1/2001 Euro Balance (MT 940/950)	18:00 CET
DECEMBER 31ST, 2000			
R	Control - IT & Ops	Final Securities Reconciliation with The Bank of Greece - Euro Balances	19:00 CET
JANUARY 1st, 2001			
S	Control - IT & Ops	Securities Reconciliation with CSD	14:00 CET
JANUARY 2d, 2001			
T	Control - IT & Ops	Contingency	

22



Changeover Week-end

- ◆ Two dress rehearsals
- ◆ 24/24 War room
- ◆ War room starts before week-end and ends only once BAU is secured
- ◆ Coverage from all stakeholders (IT, Operations, Relationship Managers)
- ◆ 80% of staff available “on call”
- ◆ Need for a gateway “dead time” to run conversion
- ◆ Need for a very detailed monitoring tool (around 300 tasks per country)
- ◆ Importance of having intermediary milestones
- ◆ Internet communication on the milestones (avoid phone bottlenecks)
- ◆ Need for contingency slots (around 40 hours in 99, including full Jan 3)

Euro changeover week-end more complex than Y2K


23



Critical Success Factors/Tips

- ◆ Nominate a Euro Champion early
 - ❖ Supported soon afterwards by Euro specialists.
 - ❖ Key for education (train the trainers logic) and sense of ownership
- ◆ Involve operational staff early
 - ❖ Education (early and with continuity)
 - ❖ Conversion preparation sessions (ex of ideas coming out: paper of different colours for euro and legacy currency)
- ◆ Refrain from delegating the project to consultants
 - ❖ Rather, use them on specific parts (project office, documentation)
 - ❖ You want your people to take ownership
- ◆ Manage counterparties proactively
 - ❖ Try to monitor the readiness of counterparties (during Market testing, through contacts at clerk level)
- ◆ Do not overcomplicate client testing

24



Summary

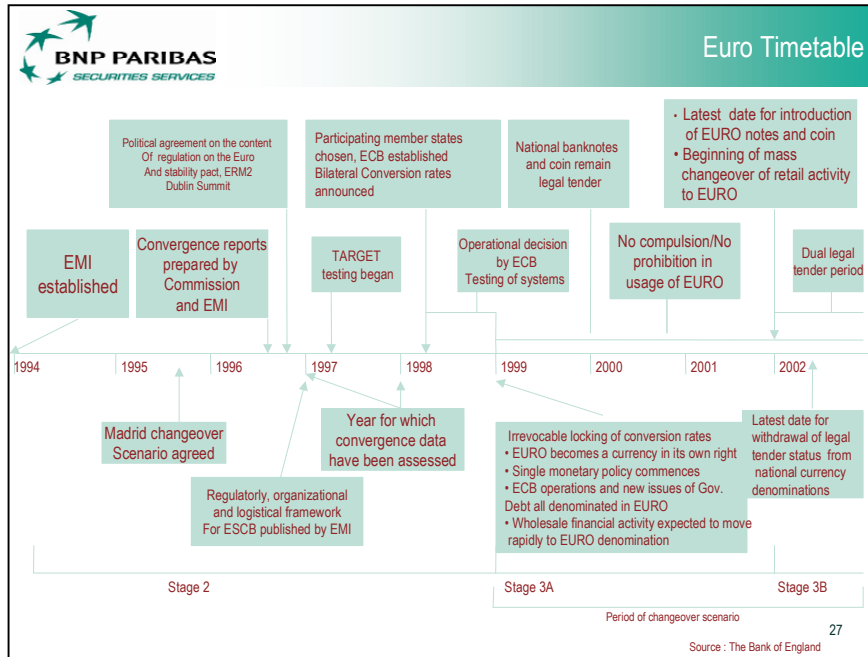
- ◆ Preparation, preparation, preparation
- ◆ Start early (Big Bang calls for a longer lead-time)
- ◆ Leverage Y2K experience, but be prepared for something more complex
- ◆ Some “over-killing” on IT developments can be avoided
- ◆ Conversion of non-resident clients should be easier (less education need from US, UK and first wave; less flexibility need)
- ◆ Significant amount of existing material and industry experience that can be leveraged
 - ✦ Many answers for second wave countries are of course still unknown
 - ✦ But all the questions structuring the conversion are probably already known and documented

25



◆ Appendices


26



BNP PARIBAS SECURITIES SERVICES Redenomination


“While redenomination may initially appear complicated, it is essentially a straightforward process. But it is an important process which every market participant must get right in order to avoid reconciliation differences.”

Euro Countdown – Paribas June 1998


Redenomination Terminology


- ◆ **Simple redenomination** - Nominal values of securities are converted into euro and rounded either to one cent (two decimals) or truncated to whole euro.
- ◆ **Renominalisation** – a step beyond simple denomination, changing the minimum unit for trading.
- ◆ **Cash conversion** – nominal values of securities remain unchanged, the currency unit in which the security is quoted and traded is simply re-expressed so that cash countervalues are paid in euro.
- ◆ **Reconventioning** – changing the underlying terms of a security, such as the introduction of no par value shares, or changing the terms of the issue (e.g. for bonds, the interest period, method of accrual calculation, etc.)

29


Bond redenomination
Bottom-up method, to a whole Euro

- ◆ Starts at the level of each account position
- ◆ The holding is converted and then truncated (non decimal rounding) to a figure of a whole Euro
- ◆ The decimal position (expressed to five digits) is marked to market (including accrued interests) and paid in cash to the investor


Holding position:	FRF 24,000 (12 bonds of FRF 2,000 nominal)
Conversion rate FRF/euro:	6.55957 (six digits)
Redenominated holding:	$12 \times 2,000 / 6.55957 = \text{euro } 3,658.7764$ (truncated after fifth decimal)
Converted holding:	Euro 3,658 (3,658 bonds of 1 euro)
Cash compensation:	0.7764* Market price as of 30th December + accrued interest : - Marked to market ($0.7764 \times 137.5\%$) = euro 1.06755 - Accrued interest ($0.7764 \times 8.5\% \times 72/365$ days) = euro 0.01301
Cash compensation (unrounded):	Euro 1.0805
Cash compensation (rounded):	Euro 1.08 (commercial rounding)



Bond Redenomination Impacts

- ◆ Pending trades
 - ❖ Redenomination of pending trades can result in rounding errors in the case of the bottom-up method.
 - ❖ Sum of the deliveries, converted into euro, may not be equal to the value in euro of the original holding position or of the corresponding receipt.
- ◆ Omnibus Accounts
 - ❖ In some cases, the sum of the positions in the individual client accounts, converted into euro may not be equal to the value in euro of the omnibus account position.
- ◆ Give/Take facility
 - ❖ In order to overcome the two issues above, market authorities introduced Give and/or Take facilities.






31




Bond Redenomination Renominalisation and Odd Lots

- ◆ Some countries chose to also renominalise (ie change the minimum unit for trading).
- ◆ This implied the generation of odd-lots and subsequent need for a repackaging activity.
- ◆ In countries which stopped at a simple redenomination, the minimum denomination of the bond corresponded also to the minimum tradeable lot.

Odd lots?

France	Germany	Italy	Spain	Belgium
				
NO Denomination = tradeable unit = 1 euro	NO Denomination = tradeable unit = 1 euro cent	YES . 1 000 euro for G Bonds	YES . 100 euro for G Bonds . 10 000 for T Bills	YES . 1 000 euro for G Bonds

32




Bond redenomination
Odd-lots

- ◆ Bond holders face three options for dealing with odd lots :
 - ❖ Buy them (to aggregate up to a minimum tradeable lot)
 - ❖ Sell them (to banks or intermediaries, who will package them into minimum tradeable lots)
 - ❖ Hold them (until maturity)

Nominal value :	Euro 7,656
Tradeable lot :	Euro 1,000
Odd lots :	Euro 656
Re-packaging alternatives :	Buy euro 344 Sell euro 656 Hold odd lots until maturity

33



Bond redenomination
Pros and Cons of “Bottom-up”


Advantages

- The interests of each omnibus account are respected, as the percentage of the overall bond held by each investor would not be altered by the conversion.
- The rounding to a euro cent will keep the cumulative rounding error low.

Disadvantages

- The nominal value of the converted bond would depend upon its distribution.
- Roundings could result in a discrepancy between the position held by the custodian with the central depository, and the sum of the positions in its clients’ omnibus accounts. Although negligible in real terms, this may create legal difficulties.
- There is also the question of interest payable on any cash compensation and its taxability, as this effectively enforces early redemption (applies to « whole euro method only).

34



Bond redenomination
Pros and Cons of “Top-down”

Advantages


- It is possible to predict the rounding error precisely, as this is an independent variable from the number of positions and the distributions of lots. The Treasury therefore knows the size of the debt in euro as soon as the conversion rates are made available.
- The position of each custodian would correspond to the sum of the positions of its clients.

Disadvantages

- For any given conversion rate, all roundings will be of the same sign, and for large amounts the rounding error could result in larger absolute deficits.
- The difference could be positive or negative, depending on the conversion rate.

Systems have to be able to handle all securities redenomination methods

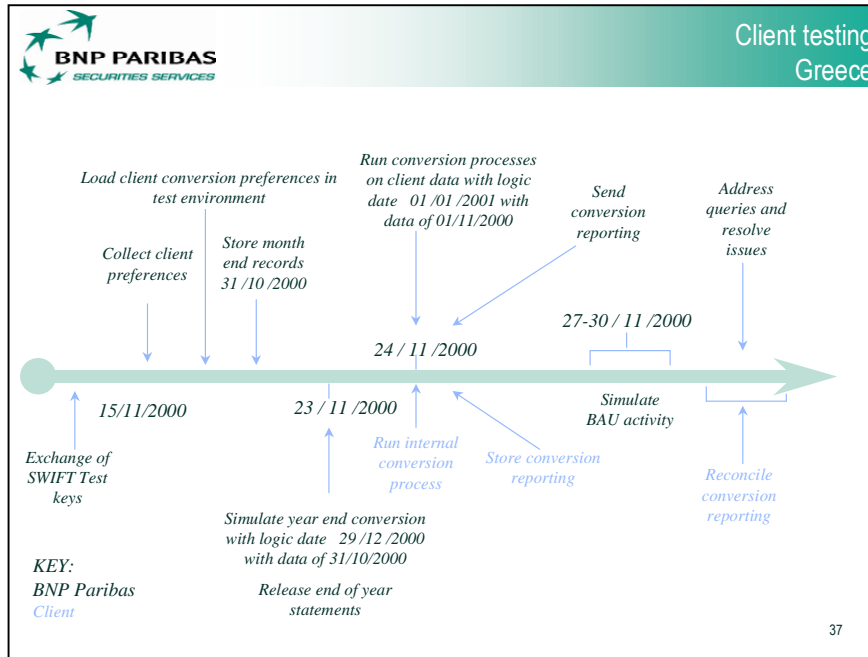
35



Taxation

- ◆ Tax Authorities: only real issue is how tax forms are denominated. This can be :
 - ❖ In Euro at the request of the taxpayer
 - ❖ In local currency only
 - ❖ A single tax form allowing completion in either currency
- ◆ Withholding Tax – Calculation and payment
 - ❖ Calculation in the currency of denomination of the securities
 - ❖ Payment to tax authorities always in euro through the interbank payment system
- ◆ Withholding Tax – Refund
 - ❖ Paid to the agent banks in euro, regardless of the submission date of the tax form (ie even if prior to January 1st 1999)

36



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- BNP PARIBAS SECURITIES SERVICES** Client testing Greece
- ◆ 23/11/2000 (Last BAU day in local currency)
 - ❖ Release statements (MT571/572/573/940/950) to clients to simulate end of year process.
 - ❖ Simulate conversion weekend reporting to clients including (MT571/573/53X, 555/563, 940/950)
 - ◆ 24/11/2000 (First Business day in euro)
 - ❖ Open following business day (1st business day in euro) we will process instructions received from client simulate normal clearing activity, matching & settlement.
 - ❖ Only instructions with value date 3/11/2000 will be settled
 - ◆ 27/11/2000 - 30/11/2000 (BAU in euro)
 - ❖ Test cross border payments
 - ❖ Perform end of day processing & release statements (MT571/572/573/940/950) to clients
 - ❖ Answer client queries
- 38