

# VP SECURITIES - SELF-ASSESSMENT, CPMI-IOSCO PRINCIPLES

February 2016

*VP SECURITIES continues its good track record of  
complying with international standards*



VP SECURITIES

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## VP SECURITIES disclosure

Responding institution:

Jurisdiction(s) in which the FMI operates:

Authorities regulating, supervising or overseeing the FMI:

VP SECURITIES A/S

Denmark

Danmarks Nationalbank and the Danish Financial Supervisory Authority

The date of this disclosure is 25 February 2016.

This disclosure is publicly available at [www.vp.dk](http://www.vp.dk).

For further information, please contact:

Head of Risk & Compliance: Jakob Hermansen

Phone: +45 6043 0151

E-mail: [jah@vp.dk](mailto:jah@vp.dk)

# INTRODUCTION & EXECUTIVE SUMMARY

## INTRODUCTION

Since the beginning of the millennium, VP SECURITIES has been subject to oversight by Danmarks Nationalbank and the Danish FSA, resulting in several assessments. With this report, a new milestone is reached, as this report reflects the changes to the framework governing oversight of financial market infrastructures, introduced in 2013 by Bank for International Settlements. One of the changes introduced is a disclosure framework intended to supplement the CPMI-IOSCO Principles for Financial Market Infrastructures, which is aimed at:

- Providing a substantive overview of key risks, policies, controls, rules and procedures on a principle-by-principle basis
- Providing current and prospective participants and other stakeholders with a comprehensive understanding of VP SECURITIES, and finally
- Improving transparency in relation to the governance, risk management and operating structure of VP SECURITIES.

The report is structured according to the guidelines set by the Committee on Payment and Settlement Systems (CPSS) and provides a general description of VP SECURITIES, including a brief summary of major changes implemented since Danmarks Nationalbank published the last oversight report in 2012. The general description is followed by a summary of the assessment by the overseers, showing that VP SECURITIES fully observes the majority of the principles relevant to VP SECURITIES. The summary is followed by a principle-by-principle description which, where relevant, includes suggestions for improvement provided by the overseers and VP SECURITIES' comments on these.

## SUMMARY OF MAJOR CHANGES SINCE 2012

In 2013, VP SECURITIES introduced a new settlement platform, vp.FUND HUB®. vp.FUND HUB® is VP's settlement platform, which supports Transfer Agents in the distribution of fund units. It enables Transfer Agents to service their Fund clients by issuing their investment fund units through a CSD. Apart from a fully-automated order routing process, it allows multicurrency clearing and settlement in commercial bank money and ensures secure safekeeping on the distributors' CSD accounts.

In 2014, VP SECURITIES and Norsk Tillitsmann (now Nordic Trustee ASA) set up a joint venture named Nordic Trustee A/S. Nordic Trustee's main activity is to offer trustee services to bond investors, and the company plays an active role in the development of the Danish commercial bond market. In 2015, VP SECURITIES and its links to Euroclear Bank, Clearstream Bank Frankfurt and VP LUX were approved by the Eurosystem as eligible for Eurosystem credit operations. Bond issuers may therefore now also issue Eurosystem-eligible, EUR-denominated bonds via VP SECURITIES.

VP SECURITIES is currently working on adapting its systems and services to the new, harmonised EU framework for CSDs (CSDR) and on the migration of its professional market settlement activities to the joint European settlement platform, TARGET2-Securities (T2S).

VP SECURITIES expects to apply for a CSDR licence in the second half of 2016 and to migrate to T2S in September 2016 (EUR) and in 2018 (DKK). The CSDR licence will allow VP SECURITIES to offer its European market harmonised, post-trade services, as well as its Nordic market issuance, safekeeping and settlement services for clients in all EU/EEA countries.

# GENERAL BACKGROUND OF THE FINANCIAL MARKET INFRASTRUCTURE (FMI)

*This section provides a brief introduction to VP SECURITIES, Clearing & Settlement and the market in which VP SECURITIES operates.*



# GENERAL BACKGROUND OF THE FMI

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## GENERAL DESCRIPTION OF THE FMI AND THE MARKETS IT SERVICES

VP SECURITIES (VP) is a Central Securities Depository operating under Danish law, supervised by the Danish Financial Supervisory Authority (Finanstilsynet) and subject to oversight by the Danish Central Bank (Danmarks Nationalbank).

The VP system provides the infrastructure for the Danish securities issuance and post-trading market: issuance of securities, book-entry of ownership of securities, clearing and settlement of securities transactions and processing of corporate actions, as well as various ancillary services. The vast majority of trades in Danish shares, bonds and investment fund shares are settled in the VP system. Numerous individuals and institutions hold securities accounts at VP. At the end of 2015, VP had 3.3 million securities accounts, and 2.2 million account holders.

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## THE VP BOOK-ENTRY SYSTEM

Like other OECD countries, the Danish securities settlement market also experienced a “paper crunch” in the late 1970s. This was due to a combination of growth in primary and secondary markets, and stress in the mainly manual and paper-based post-trade settlement procedures. The primary Danish securities markets at that time were mainly a market for listed domestic equities (average size compared to peer markets) and listed government bond and mortgage-credit bond markets (highly leveraged and highly liquid compared to peer markets), with a labour-intensive process of delivering physical bearer certificates or surrendering registered securities certificates for registration. Despite relatively efficient paper-based settlement (T+3 rolling settlement cycle), banks and brokers faced increasing settlement risk due to a growing volume of “interim notes” (proxy settlement without delivery of the underlying physical securities).

In response, political consensus between market participants and regulators resulted in an ambitious reform of the domestic infrastructure and securities legislation in 1980. The reform was based on four “pillars”:

1. An industry-wide financial infrastructure redesign based on a joint workflow analysis of the entire securities value chain (issuance, clearing, settlement and custody).
2. The introduction of legal statutes for issuance, safekeeping and transfer of dematerialised securities (introduc-

tion of fungible securities and proprietary law principles similar to land property law).

3. The introduction of a central securities depository (CSD) as the operator of a completely paperless (dematerialised) central settlement system without affecting the direct relationship between investor and issuer, with domestic central bank money as the settlement asset and with a single settlement process for all cash instruments (equity, bonds and investment funds).
4. The introduction of a dematerialised securities book-entry system that allowed banks and brokers to hold their own and/or their customers’ assets on segregated securities accounts with VP at either omnibus or direct holding-account level, and with decentralised securities account management (banks/brokers continue to act as issuer and investor intermediaries).

Accordingly, VP was established by law in 1980 as a private, independent institution. In 1983, VP was the first in the world to introduce full dematerialisation of listed bonds, followed in 1988 by the full dematerialisation of listed shares and investment funds. By the end of 2015, the total market value of bonds issued under VP was DKK 3.9 trillion. The total market value of shares issued under VP was DKK 2.0 trillion and the total market value of investment funds was DKK 1.1 trillion.

The VP book-entry system is designed as a single system that is available to both professional market investors and retail investors. As a rule, securities issued under VP and held on accounts with VP are held on end-investor accounts maintained by banks acting as account controllers, whereas securities issued under VP and held on accounts with other CSDs are held on omnibus accounts with VP. By the end of 2015, there were 147 participants in the VP system. The relationship between VP and the participants is regulated by a general participation agreement, as well as sub-agreements according to the participant’s functions. Other CSDs, for instance, are subject to special agreements, even though they participate in the VP system in a similar way to other participants.

The direct market benefits from the dematerialisation reform were increased investor protection (reduced risk of theft and fraud compared to physical securities); reduced operational risk (automation of previous manual and/or paper-based procedures); and increased cost efficiency (scale benefits from issuance and settlement via central securities accounts

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# GENERAL BACKGROUND OF THE FMI

– “hub-and-spokes” IT architecture).

The indirect benefits from the dematerialisation reform were an efficient “post-trade” change management (VP acting as converter from domestic formats into global industry formats, e.g. ISIN, SWIFT and BIC, safeguarding banks and brokers from sinking costs in non-competitive industry harmonisation initiatives); the introduction of a central corporate action process (same-day distribution of interest and dividends from the issuer cash account to end-investor cash accounts); the introduction of integrated liquidity management for banks (an infrastructure designed for optimal re-use of cash, collateral and intraday-credit facilities for settlement of securities, retail payments and currencies/CLS).

Since the start of operation in 1980, this basic financial infrastructure has allowed for further automation of financial market value chains (e.g. access to real-time conversion of mortgage loans, same-day settlement of house financing, direct communication and CA processing from issuer to investor, and electronic annual general meeting services).

In September 2014, the EU CSD regulation introduced a harmonised European legal framework for CSDs, which will enter into force gradually between 2016 and 2023. This harmonised European legal framework is very similar to the current domestic legal framework applicable to the VP book-entry system (e.g. the requirement of full dematerialisation of tradeable securities and freedom of choice for issuers concerning place of issuance, as well as freedom of choice for investors concerning their preferred asset segregation service level - omnibus accounts or individual client accounts). The main impact of the CSD regulation on the VP book-entry system is therefore the introduction of a “European passport” that allows VP to also offer its core and ancillary services to issuers and investors in other EU/EEA countries.

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## THE VP SETTLEMENT SYSTEM

The main assets in the Danish securities market are shares, investment funds and bonds listed on Nasdaq Copenhagen. All Danish securities listed on Nasdaq Copenhagen are issued in dematerialised form, and held and settled via book-entry at a CSD. At the end of 2015, close to all listed shares, investment funds and bonds were issued under VP.

From the start of operation in 1980, VP held a monopoly position as securities depository in Denmark. This monopoly was repealed via a stock-market reform in 1995 that introduced competition on trading as well as on post-trading in

the Danish market. VP is currently the only company authorised to operate as a CSD in Denmark. Cross-border settlement of securities issued under VP does not require a domestic CSD licence and some of the total settlement volume of securities issued under VP is via accounts of CSDs which are licensed in other EU/EEA countries and which act as clearing members with VP under customised terms (“CSD-links”). As a response to this new competitive situation, VP was demutualised in 2000 into a limited liability company, to allow VP to respond to the changed market conditions.

As Denmark is outside the Eurozone, but pursues a fixed-exchange-rate policy vis-à-vis the euro, with a fluctuation band of +/- 2.25 per cent, in 2008 VP decided to establish a subsidiary CSD in Luxembourg (VP LUX) to allow Danish banks and mortgage-credit banks to issue mortgage-credit bonds denominated in EUR that are eligible for Eurosystem credit operations. VP LUX is overseen by Banque Centrale du Luxembourg, Luxembourg, which has entered into a memorandum of understanding regarding oversight with Denmark's Nationalbank. In 2015, VP SECURITIES and its links to Euroclear Bank, Clearstream Bank Frankfurt and VP LUX were also approved by the Eurosystem as eligible for Eurosystem credit operations. Bond issuers may therefore now issue Eurosystem-eligible, EUR-denominated bonds via VP SECURITIES.

Most trades are settled under VP in net settlement batches on T+2. Trades are netted multilaterally before a settlement batch in accordance with BIS DvP model 3. VP's 24-hour settlement day begins at 6:00 p.m. and ends just before 6:00 p.m. on the following banking day. During each 24-hour settlement day, VP conducts six net settlement batches for securities trades with legal effect from the following times: 6:00 p.m., 00:35 a.m., 07:05 a.m., 10:15 a.m., 12:00 noon and 2:15 p.m. In the first three batches, transactions in both Danish kroner and Euro are settled, while the fourth and fifth batches are in Danish kroner only, and the last batch in Euro only. All batches are settled in central bank money. Trades can also be settled on a gross basis between 8:00 a.m. and 3:00 p.m. in accordance with BIS DvP model 1, in both Danish kroner and Euro. Furthermore, VP also settles Corporate Actions in Icelandic and Swedish kronor in two separate batches scheduled for 12:45 p.m. and 14:15 p.m., respectively.

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## THE SECURITIES MARKET

As the Danish Central Securities Depository, VP provides core services such as clearing & settlement of securities, funds order routing (vp.FUND HUB), safe-keeping of securi-

# GENERAL BACKGROUND OF THE FMI

ties (100 per cent dematerialised), and issuance. Furthermore, VP provides a number of ancillary services which are further described under *the general organisation of the FMI*.

Below are five tables providing an overview of the key figures for VP SECURITIES in relation to clearing, settlement and safekeeping.

**TABLE 1: NUMBER OF PARTICIPANTS IN CLEARING AND SETTLEMENT**

	2015	2014
Domestic	73	74
Foreign	69	67
<b>TOTAL</b>	<b>142</b>	<b>141</b>

Source reference: VP's own calculations.

**TABLE 2: NUMBER OF ISSUED SECURITIES**

	2015	2014
Shares	555	480
Bonds	2,040	2,038
Investment funds	854	770
<b>TOTAL</b>	<b>3,449</b>	<b>3,288</b>

Source reference: VP's own calculations.

**TABLE 3: NUMBER OF SECURITIES ACCOUNTS AND INVESTORS, DKK**

	2015	2014
<b>Number of accounts</b>	<b>3,3m</b>	<b>3,3m</b>
Private investors	1.7m	1.6m
Corporations	123,000	120,000
Foreign investors	71,000	68,000
<b>TOTAL</b>	<b>1.9 m</b>	<b>1.8m</b>

Note: The sum of investors is less than the total number of securities accounts, as investors may hold more than one securities account.

Source reference: VP's own calculations.

**TABLE 4: TRANSACTIONS 2015, DKK**

	NUMBER OF TRANSACTIONS	MARKET VALUE OF TRANSACTIONS
Bonds	0.9m	42,190 billion
Shares	8.3m	10,841 billion
Funds	7.5m	1,893 billion
<b>TOTAL</b>	<b>16.7m</b>	<b>54,924 billion</b>

Source reference: VP's own calculations.

**TABLE 5: SETTLEMENT 2015**

	SETTLEMENT RATIO TRANSACTIONS	SETTLEMENT RATIO VALUE
Bonds	99.11%	99.32%
Shares	97.61%	95.85%
Funds	99.57%	98.16%
<b>TOTAL</b>	<b>98.56%</b>	<b>98.84%</b>

Source reference: VP's own calculations.

## BONDS

The Danish bond market is currently the third largest bond market in Europe, and the mortgage-credit system makes up a substantial part of the financial sector in Denmark. In terms of bonds issued solely for the purpose of funding real property, Denmark has the second-largest mortgage-credit market in Europe. Covered bonds are purchased and sold daily, mainly by domestic institutional investors, which constitute a very stable investor base. Covered bonds are traded as liquid and secure securities – even in times of financial unrest.

Issued covered bonds total nearly DKK 2,800 billion (end-2015). This amount exceeds Denmark's annual GDP of around DKK 1,980 billion by nearly 40 per cent and is roughly four times higher than the sovereign debt of around DKK 650 billion. Mortgage lending represents around two thirds of total lending by financial undertakings.

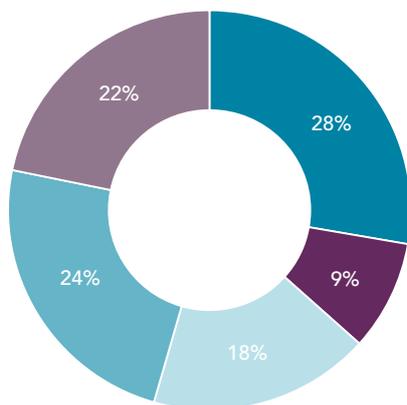
46 per cent of Danish covered bonds are held by financial undertakings, typically commercial banks headquartered in Denmark. Domestic pension and insurance companies hold 24 per cent. In total, close to 70 per cent of the covered bonds are held by Danish institutional investors, as shown in Chart 1.

# GENERAL BACKGROUND OF THE FMI

Financial undertakings in Denmark use covered bonds as a material instrument in their liquidity management and the investor base has been fairly stable for decades. This makes for a liquid and deep mortgage market.

Foreign investors account for around 20 per cent of the holdings in mortgage-credit bonds. This share decreased during the financial crisis, but has increased again in the past few years.

**CHART 1: DISTRIBUTION OF COVERED BONDS IN OCTOBER 2015**



- Banks and Mortgage Institutions
- Non-Financial Undertakings
- Investment Funds
- Insurance Companies and Pension Funds
- Foreigners

Source reference: Danmarks Nationalbank, Financial Stability report, 2-2015.

## LIQUIDITY AND TURNOVER

The outstanding amount of bonds changes hands frequently, although some smaller bond series are traded infrequently.

Overall, the general level of liquidity in mortgage-credit bonds is high, according to an analysis by Danmarks Nationalbank in the second half of 2015. However, the volatility of the liquidity has increased since the end of 2014, which may indicate less robust liquidity.

According to Nasdaq Copenhagen, covered bonds worth approximately DKK 20 billion were sold and purchased on a daily basis in 2015, equivalent to around DKK 6,300 billion annually, including the large refinancing auctions.

Given the considerable trading volumes on the exchange, the official prices – except in smaller illiquid series – reflect the current market conditions. Ultimately, this helps to ensure that borrowers, for example, obtain a fair price when raising mortgage-credit loans or when they want to redeem existing loans. Furthermore, Danish mortgage banks issue new covered bonds on an ongoing basis, via so-called tap issuance. Consequently, Denmark has a mortgage-credit market with daily new issues in existing bond series.

## COVERED BONDS DURING THE FINANCIAL CRISIS

Danmarks Nationalbank frequently examines the liquidity levels in the Danish bond market. The conclusions are published in the semi-annual Financial Stability report.

Generally, the most recent analysis (second half of 2015) concludes that the liquidity in mortgage-credit bonds is good, but the underlying volatility of the liquidity has picked up in the underlying volatility of the liquidity, which could indicate that the liquidity is less robust, resulting in a higher risk that small shocks to the market may result in lower liquidity.

Factors supporting high liquidity include: high credit quality, eligibility as collateral at Danmarks Nationalbank, and investors with a long-term investment horizon, e.g. pension funds. Factors limiting liquidity are small series, short-term investors, e.g. foreign investors, and regulatory requirements, i.e. Liquidity Coverage Ratio requirements.

Historically, the prices of Danish covered bonds have been quite close to the prices of government bonds. Price spreads do vary according to various factors, but spread widening is limited, both in terms of duration and extent.

## SHARES

The Danish share market can be divided into two:

- Large- and Mid-Cap: the stock market indexes of the most-traded shares on Nasdaq Copenhagen, which are cleared through Euro CCP.
- All other shares, which are traded on Nasdaq Copenhagen.

Clearing and settlement of securities traded on Nasdaq Copenhagen is not handled automatically by VP, but a link exists between Nasdaq Copenhagen and VP.

# GENERAL BACKGROUND OF THE FMI

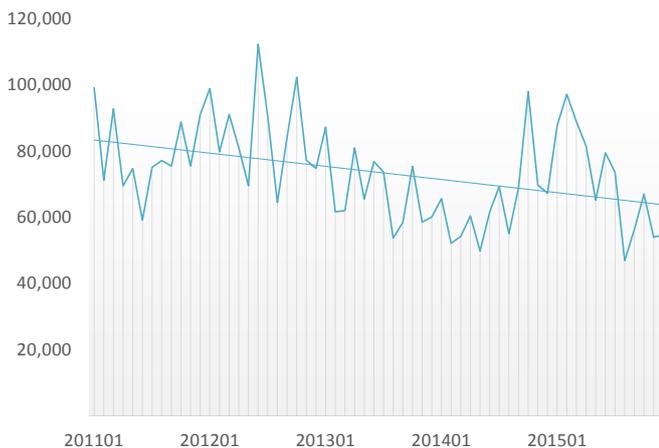
## INVESTMENT FUNDS

Investment funds are one of the most favoured types of securities on the private market. Statistics show that more private investors are tending to move from shares to investment funds in the Danish securities market.

Investment funds are popular with private investors as investment funds offer diversification across asset classes, currencies and industries for a moderate investment amount.

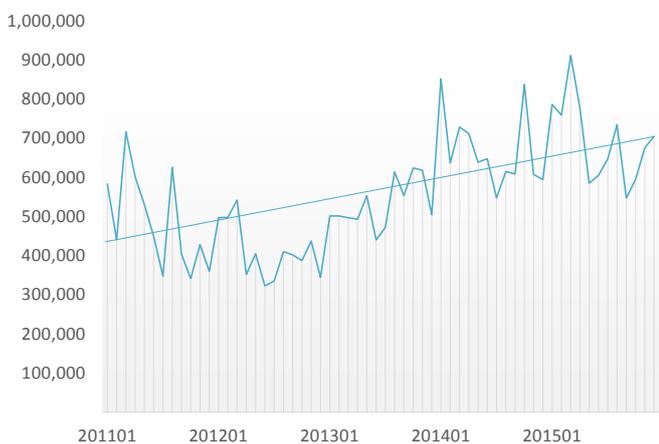
More than 800,000 private investors have invested DKK 435 billion in the 850 different investment funds offered in the market.

## CHART 2: BOND SETTLEMENT VOLUME



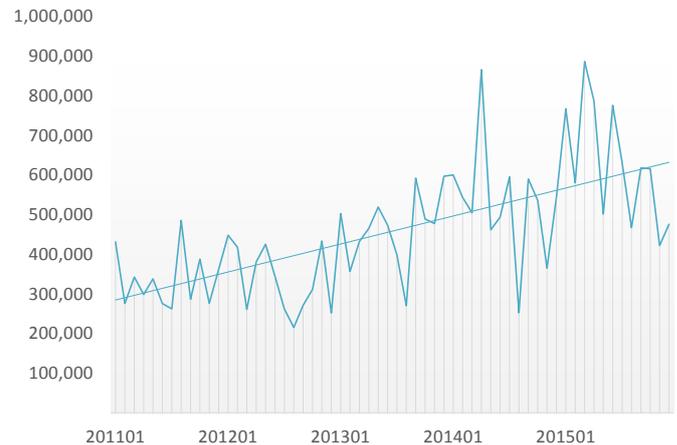
Source reference: VP's own calculations.

## CHART 3: SHARE SETTLEMENT VOLUME



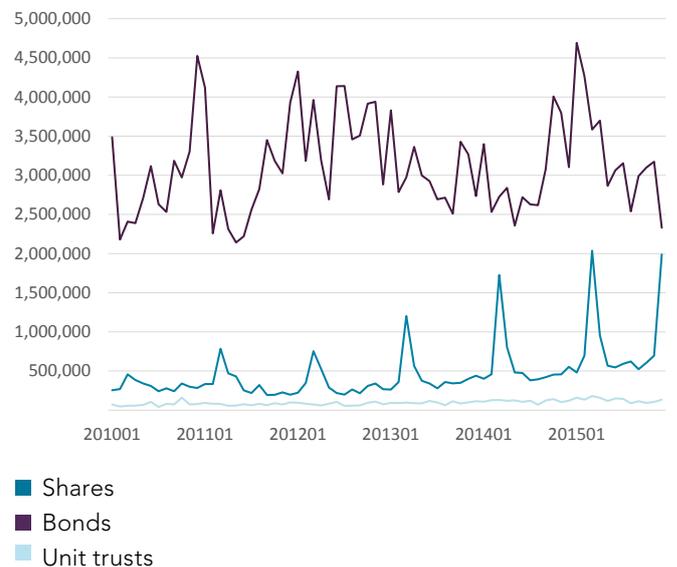
Source reference: VP's own calculations.

## CHART 4: INVESTMENT FUND SETTLEMENT VOLUME



Source reference: VP's own calculations.

## CHART 5: MARKET VALUE OF SECURITIES SETTLED



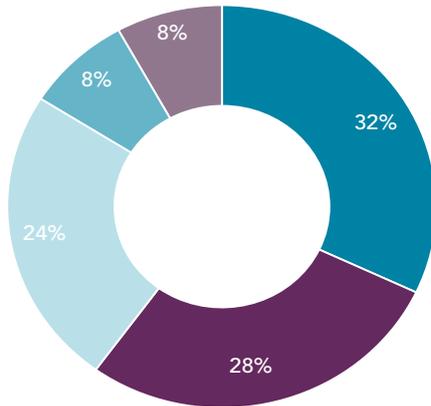
Note: The Chart shows the market value of securities traded.  
Source reference: VP's own calculations.

## GENERAL ORGANISATION OF THE FMI

VP SECURITIES A/S is a limited liability company owned by various participants in the Danish securities market, making VP a mainly user-governed infrastructure service company.

# GENERAL BACKGROUND OF THE FMI

**CHART 6: OWNERSHIP OF VP SECURITIES A/S**

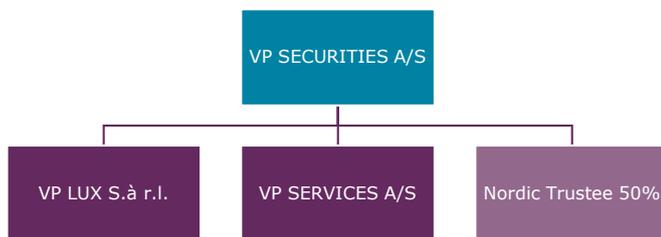


- Banks and stockbroking companies
- Bond-issuing companies
- Danmarks Nationalbank
- Share issuers
- Institutional investors

Source reference: VP's own calculations.

Ancillary services to VP's core services as a CSD are allocated to subsidiaries, as shown in the figure below.

**CHART 7: GROUP STRUCTURE**



In 2008, VP established a subsidiary, VP LUX, which operates as a CSD in Luxembourg, but uses VP's systems and is operationally managed from Denmark. Danish banks and mortgage banks have issued a number of Danish mortgage-credit bonds denominated in EUR through VP LUX. Cash settlement with VP LUX can be grouped in two cate-

gories: settlement of interest and redemptions from bonds issued with VP LUX and DvP-settlement of issuance and redemption of investment funds with VP LUX. VP LUX is overseen by Banque Centrale du Luxembourg, which is planning to prepare a separate assessment report on VP LUX.

## ANCILLARY SERVICES

VP SERVICES A/S (also called VP INVESTOR SERVICES) is a wholly-owned subsidiary offering a complete package of advisory services, support and software tools for effective investor relations management. The company had paid-up share capital of DKK 10 million and equity capital of DKK 23 million<sup>1</sup> at the end of 2015.

VP SECURITIES offers Asset Services, operates Danish securities accounts for clients, follows up on trades, notifies upcoming Corporate Actions, and processes them. Outsourcing of Back Office securities management is a valuable solution when resources or specialist knowledge are scarce. VP SECURITIES also handles safekeeping of non-Danish securities through foreign cooperation and partners. The core competences also include solutions for efficient management of collateral accounts.

VP SECURITIES can act as a company's Issuing Agent via our VP Issuing Agent Services department that has 30 years' experience in the field, so that whether shares, bonds or unit trust certificates are to be issued, VP has the knowledge required. We handle all types of Corporate Actions, e.g. dividend, issuance with pre-emptive rights, mergers and stock splits, etc. VP ensures the completion of timely payment to investors, including payment of dividends, interest and drawing. These payments can take place in several currencies.

The investment fund industry is changing constantly, and current topics include international distribution, streamlining of processes across borders and automation. Fund managers, their Transfer Agents and Distributors are all interested to deliver best service to the investors. However, connectivity from the investor all the way to the fund manager can be challenging, and processes such as the administration of issues and redemptions, re-investments and distribution of fees can be cumbersome. Through VP's Investment Fund Services, VP addresses these challenges with different solutions. The challenges of Transfer Agents and Distributors are faced in our vp.FUND HUB® solution, which is an elec-

# GENERAL BACKGROUND OF THE FMI

tronic connectivity platform. It connects Transfer Agents with Distributors electronically and automates a number of processes, which facilitates the efficient international distribution of funds. Transfer Agents benefit from the automation of order routing, clearing and issuance processes, while Distributors get simple access to a universe with numerous funds.

Our subsidiary VP LUX is the first Issuing CSD in Luxembourg. We support the distribution efforts of mutual funds in other countries by connecting to the various Transfer Agents and Fund service providers.

Being a neutral third party between Transfer Agent and Distributor, and running the central book-entry system, equips us with accurate data to provide a number of different solutions to manage the distribution of fees.

In 2014, Nordic Trustee Denmark was established as a joint venture between the Norwegian company Norsk Tillitsmann (50 per cent) and VP SECURITIES A/S (50 per cent). The Trustee function is the single point of contact between issuers and investors and includes the following functions: handling of bondholders' rights vis-à-vis issuers; monitoring the development in the loans and compliance with terms and conditions; and coordination of bondholder meetings and handling of cases of breach of the loan conditions. In addition, a trustee plays a key role in the standardisation of the loan documentation and the development of a market standard for prospectuses – in order to make bond issuance more flexible and inexpensive.

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## RISK MANAGEMENT

As a CSD which thrives on serving the financial market, VP needs to have an absolute minimum of risk, in order to ensure a safe securities settlement system and safe-keeping of securities. VP eliminates credit and liquidity risk as it acts exclusively as an SSS operator and not as a principal. VP does not offer cash accounts, intraday liquidity or securities lending, which eliminates any credit risk or related market risk. Furthermore, VP does not hold a banking licence, which eliminates bank-related competition from the users of VP.

The main source of risk is operational. VP has limited settlement risk due to the design of the settlement system with a high settlement rate (97 per cent for shares, and 99 per cent for bonds and investment funds<sup>2</sup>).

The operational risk is mitigated via operational design, procedures, system audits and the compliance framework. Furthermore, all transactions are performed via straight-through-processing (STP) and a full audit trail is available for every transaction. This is described in more detail in this report under the relevant principles below.

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## LEGAL AND REGULATORY FRAMEWORK

The legal basis for VP is laid down in law, the Danish Securities Trading Act, so that any legal risk related to VP and its users is low.

See principle 1 for a more detailed description.

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## SYSTEM DESIGN AND OPERATIONS (CSD SERVICES)

From the beginning, VP has developed its own IT systems, from which it operates CSD core services. This means that clearing & settlement, issuance and safe-keeping are handled on one combined IT platform, of which VP has a full overview. This knowledge enables VP to continuously develop its IT system on an effective basis. VP has a housing agreement with IBM.

VP's core activities can be divided into three areas: clearing & settlement, issuance and safe-keeping.

## ISSUANCE

Issuance under VP is 100 per cent dematerialised, and often automated via STP. The issuer selects an issuing agent (e.g. a bank), which is also a VP participant. The issuing agent acts on behalf of the issuer with regard to the registration and maintenance of the issued securities.

Corporate actions such as dividends, capital increases, mergers, etc. are maintained through STP and are handled by VP for the end-investor. VP undertakes payments to end-investors, and ensures that the end-investors are punctually informed about the corporate actions for the issued securities.

## SAFE-KEEPING

Securities in VP are safe-kept by a custodian system designed with both omnibus accounts and, predominantly, fully asset-segregated accounts. VP has approximately 3.3 million securities accounts, with both the retail and professional markets represented.

# PRINCIPLES

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*This section provides an overview of overall compliance, as well as in-depth descriptions for each principle relevant to VP SECURITIES.*



# PRINCIPLE-BY-PRINCIPLE SUMMARY

ASSESSMENT CATEGORY	PRINCIPLE
Observed	1, 7, 8, 9, 11, 12, 16, 17, 18, 19, 20, 21, 22, 23
Broadly observed	2, 3, 13, 15
Partly observed	n.a.
Not observed	n.a.
Not applicable	4, 5, 6, 10, 14, 24

Each of the principles applicable to VP SECURITIES is thoroughly described in the following. With regard to the principles for which the Overseers have recommendations, these recommendations are presented followed by VP SECURITIES' response.

Principles not applicable to VP SECURITIES are not described. The principles not applicable to VP SECURITIES (4, 5, 6, 10, 14, and 24) relate to:

- Credit risk
- Collateral
- Margin
- Physical deliveries
- Segregation and portability
- Disclosure of market data



# PRINCIPLE 1

## LEGAL BASIS

An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.

### KEY CONSIDERATION 1

The legal basis should provide a high degree of certainty for each material aspect of an FMI's activities in all relevant jurisdictions.

### MATERIAL ASPECTS AND RELEVANT JURISDICTIONS

The most relevant legal jurisdiction for VP is Denmark. The legal basis for VP's activities is a combination of VP's rules, procedures, contracts and statutory law, which together offer a high degree of certainty for all VP's material activities such as:

- Regulatory framework
- Asset protection
- Dematerialisation
- Finality
- Default procedures
- Discharge of legal obligations

The VP SECURITIES settlement system, the financial collateral procedures, the book-entry system and the issuance procedures are all regulated under Danish law.

The only significant contract regulated by other than Danish law is the framework agreement signed by VP in 2012 with the Eurosystem on the outsourcing of VP settlement services (TARGET2-Securities), regulated under German law.

The most important legal basis for VP's activities is the Danish Securities Trading Act. The common provisions of the Act (Part 3) regulate organisational requirements (authorisation, capital adequacy and management), while Titles III and IV are the key sections in relation to this Principle, regulating VP's clearing and book-entry activities. Moreover, the Act is further elaborated on in a number of executive orders on e.g. book-entry of securities, netting and collateral. VP's website ([www.vp.dk](http://www.vp.dk)) contains references to this legal basis, and the Danish Securities Trading Act and related executive orders are publicly available on the Danish Financial Supervisory Authority's website ([www.finanstilsynet.dk](http://www.finanstilsynet.dk)).

While the actual legal basis is primarily provided by the Danish Securities Trading Act, the relationship between VP

and its participants is mainly regulated by a participation agreement. The Act stipulates a requirement for a participation agreement. The participation agreement is a standard agreement that only varies with regard to the functions chosen by the individual participants.

With regard to the VP SECURITIES issuance rules and procedures, VP has a direct and unique contractual relationship with all of its issuers. Issuance with VP is managed by the issuer for its own issuance activity (e.g. issuance of equity, investment funds, or government or covered bonds. VP maintains an account (a nominal general ledger) in the name of each issuer, to which the debt of the issuer with respect to each issue (ISIN) is legally recorded. VP is liable to the issuer for the reconciliation of any specific ISIN. Approval as an issuer requires that the participant is solely authorised through VP to increase or reduce the volume of securities in circulation against equivalent book entries to the accounts for issued securities for which the participant is registered as the issuer. Currently all securities issued with VP are issued in dematerialised form via crediting to a general ledger.

With regards to the statutory law governing securities issuance with VP, the Danish Securities Trading Act provides rules on the dematerialisation and negotiability of dematerialised securities (Section 59 of the Danish Securities Trading Act). The act of perfection for assignment, charges, etc. of dematerialised securities is book entry at a CSD, and the book-entry provisions appear from Part 22 of the Act (Sections 66 and 69 are particularly relevant).

With regard to the legal framework for securities transfer by book entry, participants in VP achieve a proprietary interest (right in rem) to securities held on accounts with VP. According to Section 66 of the Danish Securities Trading Act, priority charges and other proprietary rights in securities held on accounts with VP are perfected (and thereby protected) upon book entry at VP. Once a transfer or other right pertaining to securities has pertaining to Securities has been finally registered by book entry in VP SECURITIES, an assignee in good faith cannot be met with any objections as to the validity of the agreement, cf. Section 69 of the Danish Securities Trading Act, except in case of forgery or duress (in the case of, the assignee will be entitled to damages from VP for the losses incurred, cf. Section 80 of the Danish Securities Trading Act).

## REGULATORY FRAMEWORK

VP's rules, procedures and contracts are subject to supervision by the Danish Financial Supervisory Authority, and oversight by Danmarks Nationalbank, and have for many years been subject to scrutiny by various relevant regulators, overseers and industry associations against international standards for securities settlement systems (e.g. the Association of Global Custodians, the CPMI-IOSCO, the ESCB-CESR recommendations, the Eurosystem User Standards and Thomas Murray).

## ASSET PROTECTION

VP offers a book-entry system designed for professional as well as retail market transactions (end-investor securities accounts). This design allows for ultimate segregation of securities at end-investor account level, as well as omnibus accounts. With regard to the securities held on omnibus accounts, the Danish Securities Trading Act requires segregation of banks' securities from their clients' securities.

Securities are issued on segregated accounts (the general ledger) and thereby provide account vis-à-vis the issuer. Securities are held on segregated accounts (investor accounts) and thereby provide appropriate accounting vis-à-vis investors. All book-entry at VP is based on double book-entry principles and realignment between securities accounts.

VP's own assets (a very limited number of fixed income bonds, please see P15) are held on segregated accounts which are held by a bank acting as account controller for VP. Asset protection is further ensured by the design of the VP system, which ensures a full audit trail and control of the authorisation of any crediting or debiting of accounts with VP (general ledger accounts as well as securities accounts).

In the event of CSD negligence, misuse, etc., investors' interests in the securities are protected by a combination of the VP legal framework (right in rem protection of investors' right in securities) and a professional liability insurance contract).

VP is liable for any loss resulting from errors in connection with the registration, alteration or cancellation of rights on accounts, or payments related to accounts, even if such errors are fortuitous, i.e. strict liability, cf. Section 80 of the Danish Securities Trading Act. If an error can be ascribed to an account-holding institution, e.g. operating a direct link

from an investor SSS to VP, the strict liability rests with the account-holding institution, cf. Section 81 of the Act.

This strict liability in damages, which covers the registration of rights in VP by collateral takers, is backed up by a Participant Guarantee Scheme with a total value of currently DKK 1.1 billion, cf. Section 82 of the Danish Securities Trading Act. Section 82. The liability of Danish account-holding institutions is backed up by joint and several liability between these institutions, cf. Section 81 of the Danish Securities Trading Act. However, the total damages pursuant to these schemes for any loss resulting from the same error may not exceed DKK 500 million.

## DEMATERIALIZED

VP was the first CSD to introduce full dematerialisation of securities. Issuance in dematerialised form has been mandatory for listed equities and bonds in the Danish market since 1988. Market practice in the Danish market has expanded the scope of dematerialised securities to also cover the majority of unlisted bonds, equity, and investment funds issued in the Danish capital market. Dematerialisation or immobilization is mandatory to achieve protection of the investor's securities rights according to the VP settlement and safe-keeping procedures.

All securities issued with VP are issued in dematerialized form via debit of a general ledger account and credited of the issuers securities account with VP. The integrity of the issuer is assured the design of and the legal framework for the VP general ledger (the Danish Securities Trading Act and the VP rules and regulations on book entry) which grants the issuer the exclusive right to credit and debit the general ledger, as well as reconciliation between the general ledger and the total amount of securities held in accounts with VP.

The rights of issuers and holders to securities issued with VP are enshrined in the Danish Securities Trading Act, as well as in the legal doctrine on proprietary rights in securities.

## FINALITY

VP operates a combined batch settlement system (DvP BIS model 3) and RTGS settlement system (DvP BIS model 1), which allows participants to settle any of their securities operations with intraday finality on all opening days for all operations in securities eligible for settlement with VP (equity, fixed income and investment funds, which may be listed as well as OTC instruments).

Securities can be settled in one of six daily net settlement batches or on a (real-time) gross basis during the day. Gross settlement applies only to trades between participants also acting as primary cash providers, and only to trades on their own behalf. Most trades settle in the first batch (VP10), which is already completed shortly after the beginning of the 24-hour settlement period, at 6:00 p.m. The net settlement batches are designed to optimise settlement efficiency in VP's links to other CSDs, especially the link to Euroclear Bank. Two Euroclear Bank settlement batches are placed between VP10, VP20 and VP30. This enables participants to move securities back and forth between VP and Euroclear Bank within the 24-hour settlement period.

VP also offers settlement in other currencies than DKK and EUR in commercial bank money. This feature is limited to the settlement of single-priced investment funds where settlement in central bank money is neither practical nor available. The total volume of commercial money settlement with VP in 2013 was less than 1 per cent of the total settlement in central bank money with VP and is therefore not described further in the assessment.

### DEFAULT PROCEDURES

With regard to default with a VP SECURITIES account controller, procedures are defined in Section 64.4 of the Danish Securities Trading Act, which is publicly available via a link on VP's website. In the event of default with a securities account controller, VP is obliged to terminate the participation agreement and consequently stop the securities account controller's access to effect book entry with VP. Unless otherwise agreed, VP must subsequently take over the reporting of transactions for book entry in the affected accounts for a period of no more than four months, after which the book entries of the account holder will be transferred to an account with the individual issuer.

### VALID DISCHARGE

Section 71 of the Danish Securities Trading Act regulates the discharge of cash payments stemming from corporate actions on securities issued or held with VP. Discharge is the satisfaction of the liability or debt in payment of which the cash transfer (e.g. cash from payment of interest and redemptions) is made.

If VP instructs payment of cash from an issuer in good faith to an investor via the VP settlement system, the issuer is discharged from liability, even though the investor was not

entitled to receive the payment or was legally incompetent (except in the case of forgery or duress under threat of violence).

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### KEY CONSIDERATION 2

An FMI should have rules, procedures and contracts that are clear, understandable and consistent with relevant laws and regulations.

As a rule, the VP rules, procedures and contracts are based on standard, non-negotiable terms that are well-known to VP's participants as an integrated part of their services for their clients. The rules, procedures and contracts are publicly available on the VP website.

VP is in regular contact with its participants (e.g. quarterly meetings in a dedicated VP User Committee, various ad hoc committees and annual customer satisfaction surveys), overseers and regulators (quarterly meetings) and this dialogue is reflected in the regular updating of VP's rules, procedures and contracts.

VP's rules, procedures and contracts are subject to supervision by the Danish Financial Supervisory Authority, and oversight by Danmarks Nationalbank, and have for many years been subject to scrutiny by various relevant regulators, overseers and industry associations against international standards for securities settlement systems (e.g. the Association of Global Custodians, the CPMI-IOSCO, the ESCB-CESR recommendations, the Eurosystem User Standards and Thomas Murray).

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### KEY CONSIDERATION 3

An FMI should be able to articulate the legal basis for its activities to relevant authorities, participants, and, where relevant, participants' customers, in a clear and understandable way.

VP's activities as a CSD is subject to the Danish Securities Trading Act. The common provisions of the Securities Trading Act (Part 3) regulate organisational requirements (authorisation, capital adequacy and management), while Titles III and IV regulates VP's clearing and book-entry activities. VP's website contains references to this legal basis, and the Securities Trading Act and related executive orders are publicly available at the Danish Financial Supervisory Authority's website.

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Participants are regulated through VP's standard participation agreements, required under Securities Trading Act. Furthermore, the relationship between primary cash providers, i.e. participants with VP accounts at Danmarks Nationalbank, and Danmarks Nationalbank is governed by the latter's terms and conditions. Both VP's various agreements and Danmarks Nationalbank's terms and conditions for accounts are publicly available.

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#### KEY CONSIDERATION 4

An FMI should have rules, procedures and contracts that are enforceable in all relevant jurisdictions. There should be a high degree of certainty that actions taken by the FMI under such rules and procedures will not be voided, reversed or subject to stays.

The VP SECURITIES settlement system, the financial collateral procedures, the book-entry system and the issuance procedures are all regulated by Danish law.

As a rule, all VP rules, procedures and contracts are based on standard, non-negotiable terms subject to Danish law. Exceptions to this rule mainly apply to supplier contracts (e.g. for software licences and trademarks which are normally regulated by contract law in other jurisdictions than Denmark). The only significant supplier contract regulated by other than Danish law is the framework agreement with the Eurosystem on TARGET2-Securities, which was signed in 2012, and which is governed by German law.

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#### KEY CONSIDERATION 5

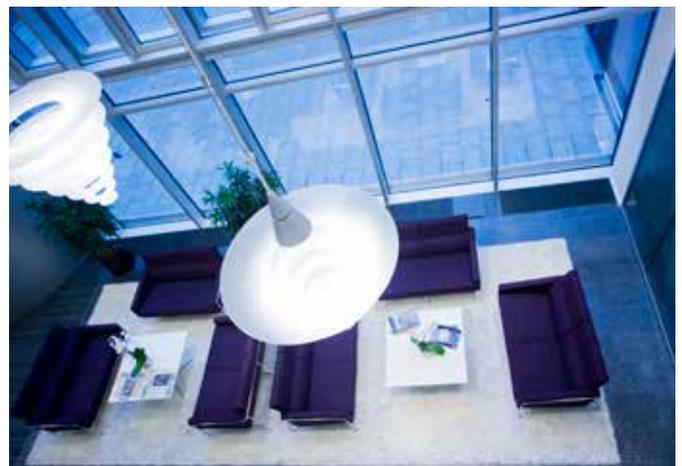
An FMI conducting business in multiple jurisdictions should identify and mitigate the risks arising from any potential conflict of laws across jurisdictions.

Denmark has fully implemented the Settlement Finality Directive, including the Danish Securities Trading Act, by which VP is regulated. Effectively all transactions in VP are covered by Danish law. Conflict-of-laws issues mainly arise on cross-border settlement of securities issued with another CSD. VP currently operates mainly as issuer-CSD and accordingly its contracts with non-domestic participants (mainly EU/EEA banks and/or other European CSDs) are all regulated by Danish law.

VP currently acts as investor-SSS with VP LUX (the VP daughter CSD in Luxembourg) as issuer-SSS of securities eligible as collateral for Eurosystem credit operations. The conflict-of-law rule in the EU Financial Collateral Directive is implemented in Danish law in Section 58n of the Danish Securities Trading Act. This provision governs securities used as financial collateral, including collateral held by a participant in favour of an NCB or the ECB.

Section 58n stipulates that if securities are registered by book entry to an account, the following issues regarding the securities shall be governed by legislation in the country where the account is maintained:

1. the legal nature of securities collateral and the proprietary effects attached hereto,
2. the requirements for perfecting a financial collateral arrangement against a third party and the completion of the steps necessary to render such an arrangement effective against third parties,
3. whether a person's title to or interest in securities collateral is to be overridden by or sub-ordinated to a competing title or interest, including whether good faith acquisition has occurred, and
4. the steps required for the realisation of collateral in the form of securities following the occurrence of an enforcement event.



## PRINCIPLE 2 GOVERNANCE

An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.

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### KEY CONSIDERATION 1

An FMI should have objectives that place a high priority on the safety and efficiency of the FMI and explicitly support financial stability and other relevant public interest considerations.

VP's objective is to operate a registration business in accordance with the Danish Securities Trading Act, to operate a securities clearing business in accordance with the Danish Securities Trading Act and to operate non-core activities in accordance with the decisions of the Board of Directors and the applicable legislation.

Part of the company's objective is to work to ensure that the design and functionality of the company's system and the company's product line are consistently future-oriented and comply with international standards. Furthermore, the company shall work to support broad participation in the Danish securities market, including a broad share culture, through reasonable terms for the registration of securities. VP is part of the infrastructure that supports the issuers of bonds through the handling of the ongoing issuing and drawing of bonds and payments thereof to the individual custody depositories. This service is provided to the issuers of bonds at a price which is determined according to the actual costs of the service. The price may not be determined on the basis that the service is essential for the issuers of bonds and is not provided by any other company.

VP's objectives are supplemented with a set of values defined by the Board. These values are trustworthiness, customer focus, value creation and ambition.

Trustworthiness is achieved via secure and stable solutions, competent advice, taking responsibility and by standing by our agreements. VP's assessment of these values is achieved via measurement of key performance indicators for its mainframe and network availability, via annual customer satisfaction review procedures and via quarterly reporting of complaints to the Board.

Customer focus is achieved via meeting our customers' requirements by understanding their business; by creating solutions in active dialogue with our customers and by providing high-level service, internally as well as externally. VP assesses fulfilment of these values via ongoing dialogue with all key customers, and via regular meetings of the VP User Group (Kundeforum) and various ad-hoc committees.

Value creation is achieved by innovation management processes. VP assesses the results of its innovation initiatives on a continuous basis in each business line, in the annual budget process and with the Board.

Ambitions are achieved by taking initiatives to the industry. VP's assessment of the results of its ambitious values are achieved via peer review. VP is often referred to among peers as an example of an innovative CSD, e.g. as the first CSD in the world to introduce full dematerialisation, the first CSD to establish electronic annual general meeting services and the first CSD in Europe to establish a subsidiary in another country (VP LUX). Assessment of VP's ambition is evidenced e.g. via invitations to make presentations and to participate in panel debates on its services and initiatives in various international fora.

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### KEY CONSIDERATION 2

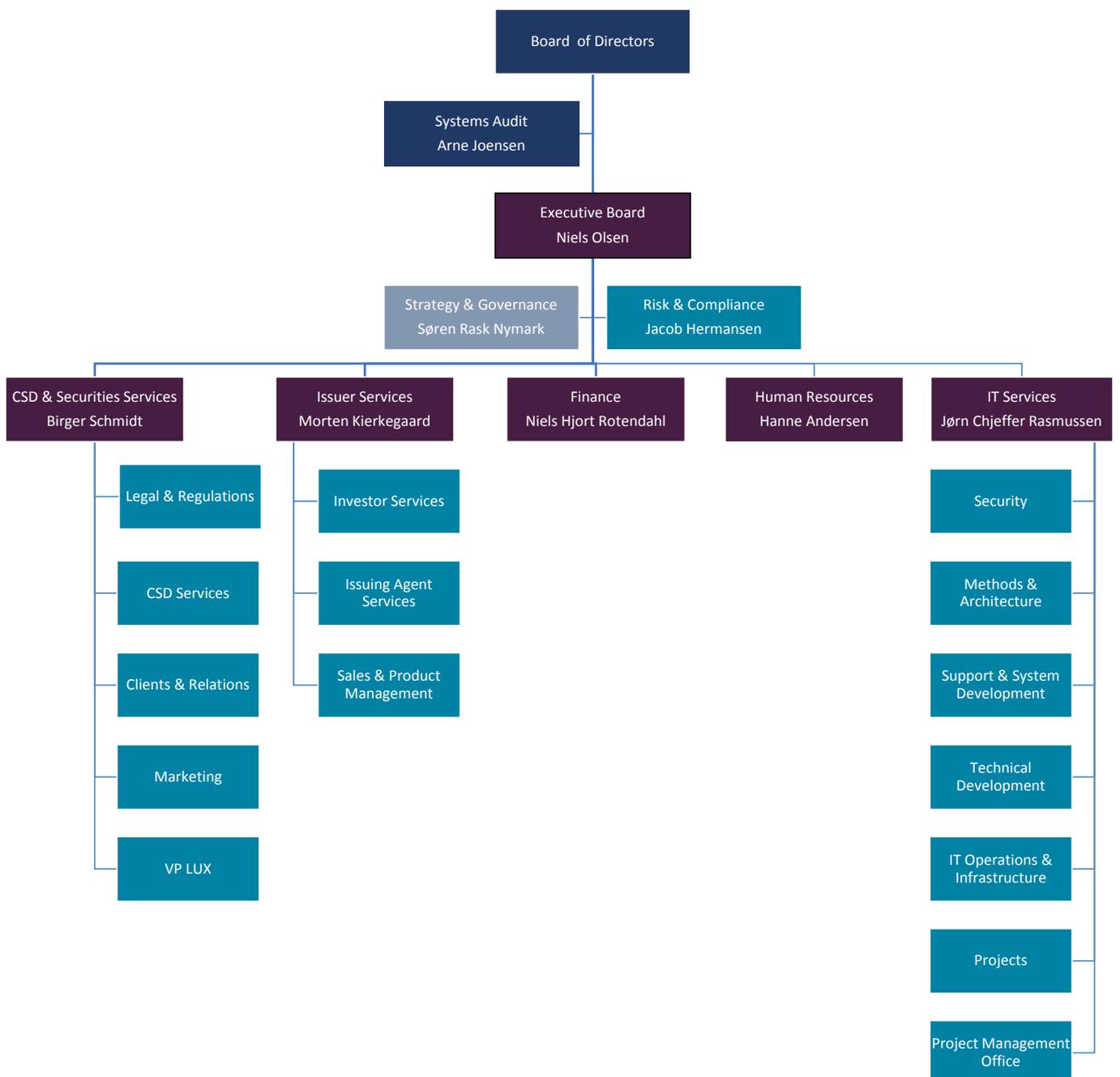
An FMI should have documented governance arrangements that provide clear and direct lines of responsibility and accountability. These arrangements should be disclosed to owners, relevant authorities, participants, and, at a more general level, the public.

VP operates under a 2-tier governance arrangement, whereby responsibilities are divided between the Board and the day-to-day management, which reports to the Board. VP is organised as a for-profit, limited liability company and therefore provides accountability to its owners via domestic corporate governance procedures (the annual general meeting of shareholders is the highest corporate governance entity within VP).

VP's Board of Directors is subject to the fit & proper rules of the Danish Securities Trading Act. All members of the Board, besides the VP employee representatives, hold leading positions within the financial sector, giving them insight into the financial sector, as well as the basis for VP's activities as a CSD. Furthermore, VP is currently preparing its Board to meet the requirements set out in the European Central Secu-

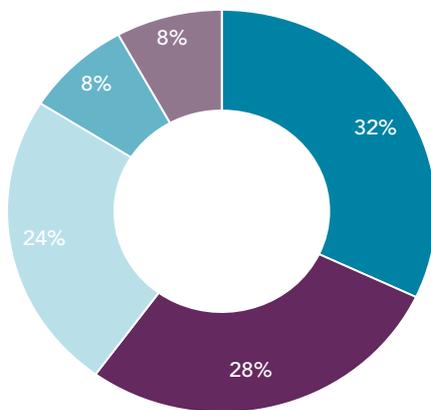
urities Depositories Regulation (EU Regulation no. 909/2014) with regard to governance and the Board of Directors. The lines of responsibility and accountability within VP are illustrated in the VP organisation chart below:

**CHART 8: VP ORGANISATION CHART**



VP was demutualised in 2000 (change of governance model from self-owned utility to for-profit, limited liability company) into a mainly user-governed infrastructure service company. VP therefore provides accountability to its users (participants) via the shareholder composition, as illustrated in the Chart below (the shareholders are by and large a reflection of the users).

**CHART 9: DISTRIBUTION OF OWNERSHIP**



- Banks and stockbroking companies
- Bond-issuing companies
- Danmarks Nationalbank
- Share issuers
- Institutional investors

### KEY CONSIDERATION 3

The roles and responsibilities of an FMI's Board of Directors (or equivalent) should be clearly specified, and there should be documented procedures for its functioning, including procedures to identify, address, and manage members' conflicts of interest. The Board should review its overall performance and the performance of its individual Board members regularly.

### ROLES AND RESPONSIBILITIES OF THE BOARD

In accordance with the Danish Companies Act, a detailed division of work between the Board and the day-to-day management is defined and documented in a dedicated internal procedure set by the Board. The VP Guideline for the division of the work between the Board and the management appoint the daily management of VP operations to the

CEO and the management assigns the day-to-day management of VP's operations to the CEO and the management. Furthermore, the procedures for the functioning of the board are set in a dedicated document. These procedures inter alia identify potential conflicts between Board members and other companies.

### REVIEW OF PERFORMANCE

The Board members (other than VP employees) are appointed via nomination from among VP's owners, in accordance with VP's user governance model. The Board nomination process is defined in a shareholder agreement that was approved by the Ministry of Economic Affairs in 2000 as part of the demutualisation of VP (see above).

In mid-2014, an external management assessment company reviewed the performance of each individual Board member. The review included the performance of the CEO and the management of VP.

### KEY CONSIDERATION 4

The Board should include suitable members with the appropriate skills and incentives to fulfil its multiple roles. This typically requires the inclusion of non-executive Board member(s).

The members of the VP Board are all subject to the fit-and-proper requirements defined in the Danish Securities Trading Act, which are similar to the fit-and-proper rules applicable to Board members in banks and other companies in the financial sector. Since the start of operations, all VP Board members (other than VP employees) have held senior positions in the financial sector or in the corporate sector.

There is no applicable legislation in Denmark that specifically requires VP to have independent Board members, nor is it defined when a Board member is considered to be independent. According to the European Commission's corporate governance recommendation from 2005, "independent" is defined as: "A director should be considered to be independent only if he is free of any business, family or other relationship, with the company, its controlling shareholder or the management of either, that creates a conflict of interest such as to impair his judgement.". As all VP Board members elected by the AGM have business relationships with VP (a reflection of VP's user-governance model), it may be questioned whether they qualify as independent Board members.

In the inherent trade-off between competence requirements and the independence of Board members, the user-governance model tends to favour competence, while corporate governance tends to favour independence.

Article 27.2 of the EU's CSD Regulation requires CSDs to have a management body of which at least one third, but no less than two, of the members are independent. There is no definition of independence in The CSD Regulation and we are currently awaiting advice from the Commission and/or ESMA on this. The CSD-regulation is currently expected to apply to the composition of VP 's Board as from mid-2016.

#### RECOMMENDATION FROM THE OVERSEERS

Board of Directors needs to include independent members. Currently, VP's Board of Directors exclusively consists of representatives of VP's owners and employee representatives. Independent members of the Board of Directors will furthermore be a requirement for CSDs under CSDR.

VP has already initiated a process to achieve compliance with the requirements under CSDR.

#### VP'S COMMENTS

Until now, VP has operated under a user-governed structure, which is about to change in order to meet the requirements set out by CSDR with regard to the independent Board members.

VP also provides accountability to its users via its user committee, via its open access to unbundled services and via its company structure (segregation of its services into a core services company (VP LUX offer issuing, clearing, settlement, and safe-keeping of securities) and dedicated ancillary services companies (VP Issuer Services offer AGM services and registrar services, and Nordic Trustee offers services as trustee and securities agent to bondholders), as illustrated in the company structure below).

VP provides accountability to other relevant stakeholders, e.g. regulators and other FMIs (central banks, CCPs and other CSDs), mainly via dedicated legal arrangements (settlement agreements, clearing rules and link agreements) and regular meetings with regulators and overseers.

#### KEY CONSIDERATION 5

The roles and responsibilities of management should be clearly specified. An FMI's management should have the appropriate experience, a mix of skills, and the integrity necessary to discharge their responsibilities concerning for the operation and risk management of the FMI.

#### ROLES AND RESPONSIBILITIES OF MANAGEMENT

In addition to strategic management and ensuring a safe and responsible organisation, VP's Board is subject to the Danish Companies Act (Section 115), with the obligation to ensure inter alia that:

1. Bookkeeping and financial reporting are performed in a satisfactory manner.
2. Procedures for risk and internal controls are established.
3. That It receives the necessary information concerning the company's financial conditions.
4. That the management carries out its duties in a proper manner in accordance with the Board's guidelines.
5. The company's capital resources at any given time are stable, including that there is sufficient liquidity to meet the company's current and future obligations as they fall due. The company is therefore at any given time obliged to assess its economic situation and to ensure that its capital resources are stable.

The roles and responsibilities of the board and the managers are further specified in the VP Guideline for the division of the work between the the Board and management.

The roles and responsibilities of the board and the management are set by the Board and evaluated on an ongoing basis.

#### EXPERIENCE, SKILLS, AND INTEGRITY

The CEO and the management all have +10 years' experience in the financial industry at C level and their skills are currently subject to assessment by an independent management evaluation company.

As VP is organised as a private, for-profit limited liability company, when necessary, the shareholders may decide to remove the VP management at their discretion (e.g. via an extraordinary general meeting), subject to regulatory approval by the VP regulator.

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### KEY CONSIDERATION 6

The Board should establish a clear, documented risk-management framework that includes the FMI's risk-tolerance policy, assigns responsibilities and accountability for risk decisions, and addresses decision making in crises and emergencies. Governance arrangements should ensure that the risk-management and internal control functions have sufficient authority, independence, resources, and access to the Board.

### RISK MANAGEMENT FRAMEWORK

VP's overall risk management policy was approved by the Board on 8 December 2014. This policy is supported with more policies and guidelines, including the Information Security Policy.

VP's risk management framework is extensively described in principle 3.

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### KEY CONSIDERATION 7

The Board should ensure that the FMI's design, rules, overall strategy, and major decisions reflect appropriately the legitimate interests of its direct and indirect participants and other relevant stakeholders. Major decisions should be clearly disclosed to relevant stakeholders and, where there is a broad market impact, the public.

### IDENTIFICATION AND CONSIDERATION OF STAKEHOLDER INTERESTS

The interests of participants are taken into account via the VP user-governance model. The interests of participants are also considered via the dedicated user committee (VP kundeforum) where VP's services and prices are discussed and reviewed on a quarterly basis. VP's strategy is discussed on a regular basis by VP's Board, which de facto reflects VP's users.

Participants are included in the VP governance process via a permanent user committee and various ad hoc committees. Via these processes, users provide advice to the VP management on inter alia business scope, prices and risk management. Due to VP's user-governance model, the potential

level of conflicts of interest between users, other stakeholders and owners is low.

The VP user committee is available to direct as well as indirect participants in the VP system, as well as to domestic and foreign participants.

VP publishes major decisions either via ad hoc press releases or in its Annual Report.



# PRINCIPLE 3

## FRAMEWORK FOR THE COMPREHENSIVE MANAGEMENT OF RISKS

An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational and other risks.

### KEY CONSIDERATION 1

An FMI should have risk-management policies, procedures and systems that enable it to identify, measure, monitor and manage the range of risks that arise in or are borne by the FMI. Risk-management frameworks should be subject to periodic review.

### RISKS THAT ARISE IN OR ARE BORNE BY THE FMI

VP's risk register contains 11 categories of risk, each of which includes an exhaustive description of how they are handled and mitigated/eliminated. The risks are:

#### LEGAL RISK

The risk of financial and reputational loss of income caused by legal uncertainty, including disputes, contractual arrangements, failure to meet non-contractual obligations, defective transactions or claims, etc.

Legal risks are addressed in VP's Articles of Association and VP's Rule Sets A – D, as well as VP's participation agreements, which are subject to annual review. Furthermore, VP is subject to the Danish Securities Trading Act, on which VP's written agreements are based. The Settlement Finality Directive is fully implemented in VP's agreements and systems. In the event of derogation from the standard written agreements, VP's Legal and Regulation Department will become involved, in order to ensure that possible "new" legal risk is treated appropriately. For further details, please see principle 1.

#### OPERATIONAL RISK

The risk of financial and reputational loss from inadequate or failed internal processes, people and systems.

VP's policies, business processes, systems and written procedures address the identified operational risks, which include human error, management failures, disruptions and service breakdowns, as well as deficiencies in information systems or internal processes.

#### CREDIT RISK

The risk of loss (direct or contingent) arising from the failure of a counterparty to meet its financial obligations.

VP SECURITIES A/S does not hold participants' cash and does not extend credit, nor does it offer securities lending. Credit risks between participants are minimised by DVP settlement and by collateralisation of the credit facilities offered by primary cash providers, which can specify the securities that they are willing to accept as security.

#### LIQUIDITY RISK

The risk of financial and reputational loss arising from VP being unable to settle an obligation at full value when due.

VP settles in DKK and EUR. All settlement at VP is settled in central bank money (interfaced settlement). VP settlement does not use liquidity from settlement banks other than central banks and VP does not manage cash accounts or offer cash liquidity itself.

Batch settlement exposes participants to implicit liquidity risk. The liquidity risk in the VP batch settlement is subject to various risk mitigation tools, in particular rules concerning margin (a requirement in the VP Clearing Rules for clearing participants to ensure additional cash liquidity of 2-4 per cent of their total net exposure in a settlement batch) and auto-collateral.

Settlement via RTGS is processed in real time (no sequencing or settlement optimisation algorithm applies) and the exposure to liquidity risk is accordingly low.

#### FINANCIAL RISK

The risk of financial and reputational loss through shareholder losses caused by the company's cash flow having proved to be inadequate to meet its financial obligations.

Financial risk is identified and measured on an ongoing basis. VP is proactive towards meeting any financial risk, be it foreseen or unforeseen, and has adopted a series of precautions.

These include the guarantee fund, which is mandatory for all VP participants, and the VP contract, as well as professional indemnity insurance and crime insurance with the ACE Europe insurance company, with combined cover of EUR 25 million. This insurance agreement covers both book-entry errors and VP's other business areas, including clearing and settlement activities and other VP activities, as well as activities in VP's subsidiaries. The insurance agreement covers errors by VP, as well as by VP's external suppliers.

Furthermore, Part 24 of the Danish Securities Trading Act requires VP to maintain a minimum guarantee of DKK 1 billion (EUR 130 million) with regard to its depository system (loss of ownership and loss of rights to securities in the book-entry system, and loss in respect of payments) to which participating account controllers are obliged to contribute. The total compensation arising from a single error cannot exceed DKK 500 million. VP SECURITIES would be called upon to use its own resources prior to the guarantee fund being used to cover an error. There has been no instance in the past three years in which the fund has been tapped. There is no equivalent arrangement for the settlement system.

Moreover, in its capacity as account controller VP SECURITIES Services is liable for errors on others' behalf, according to an agreement entered into between Danish account controllers affiliated with VP SECURITIES Services. Liability for compensation according to this agreement may not exceed DKK 50,000 per error at the current level of activity. VP SECURITIES accepts liability for losses due to its negligence in book-entry operations and reconciliations, but not for system failures or force majeure.

VP SECURITIES is reasonably sized and stable in terms of capitalisation, with DKK 210.4 million (EUR 28.26 million) in net capital and reserves at the end of 2015. It has a significant backing guarantee provided by participants of DKK 1.1 billion (EUR 150 million). Following good results since it became a for-profit limited liability company, VP SECURITIES has been able to strengthen its balance sheet, with almost two thirds of its assets in liquid investments or cash.

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### **BUSINESS RISK**

The risk of revenues being different from forecast as a result of the inherent uncertainty associated with business planning over a 2-year time horizon, or of non-anticipated changes in the nature or level of the market activity serviced by VP.

The general business risks are subject to monitoring by VP's Board of Directors, and the day-to-day operations are monitored closely by VP's Finance Department. In addition, VP's external financial auditors perform audits of VP's books, etc.

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### **ASSET COMMITMENT RISK**

The risk of financial loss due to the period of time from when control of securities or cash is relinquished until receipt of

the countervalue in VP's settlement system.

The risk has been identified and has been taken into consideration in the design of VP's settlement system.

VP settles both via RTGS and batches. RTGS involves minimal asset commitment risk and is only available in the central banks' opening hours (7.00 am until 15:30 pm). The majority of exchange-traded transactions are processed in the overnight batch that starts on settlement day-1, which sets an asset commitment period of 13 hours. It is also possible to introduce new transactions into the system between the single settlement batches during the 13-hour period. However, the design of overnight batch processing has been optimised to allow for the re-use of cash, as well as securities, e.g. through back-to-back linking of transactions in the batch.

Prior to settlement, a cash and a securities check are performed, to ensure that the resources are available. Therefore, no reservation is made before the actual settlement. Irrevocability of assets occurs once they have been matched in the VP system. Legal finality occurs at the time of settlement, and cash proceeds from the result can be used in later batches, even outside the bank's opening hours.

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### **COUNTERPARTY RISK**

The risk of financial loss caused by a counterparty's (i.e. an entity's) inability to settle its obligations at full value at any time.

The risk has been identified and eliminated with regard to VP, in view of the design of the settlement system.

Settlement with VP takes place via DVP. Furthermore, netting is applied when batch settlement is used. These two factors eliminate the principal component of the counterparty risk exposure.

VP controls the movements of securities at the depository and the movements of cash at the central bank. Since VP does not guarantee settlement, participants have counterparty risk exposure with each other with regard to the price risk on replacement costs and any consequential losses to which they may be exposed, due to cancellation of the trade. This counterparty risk is further reduced as VP participants must be financial market professionals (subject to the rules of the European Capital Adequacy Directive). Furthermore, participants are subject to a formal review and approval

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process by VP prior to joining, and the Danish FSA carries out ongoing oversight.

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### ASSET SAFETY RISK

The risk of financial loss and loss of securities due to VP's default. The risk can be eliminated via the end-investor account segregation structure offered by VP.

The risk has been identified and can be eliminated via the end-investor account segregation structure at VP.

Securities at VP can be safe-kept in two ways: either via segregated accounts or nominee/omnibus accounts in the name of the account controller (e.g. a bank). Under the Danish Securities Trading Act, client assets and participant assets are required to be totally segregated at the CSD.

All balances and securities accounts are automatically reconciled with VP on a daily basis.

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### GOVERNANCE AND TRANSPARENCY RISK

The risk that a clearing member may incur a loss arising from VP failing to act according to good governance arrangements, or failing to provide full and accurate information on its activities.

VP SECURITIES is a user-governed CSD and all of its Board members come from the financial or corporate sector. The Board of Directors is responsible for setting the company's strategy, as well as approving the company's budget.

VP SECURITIES does not set minimum performance standards or targets, but it annually assesses managers against individually-set performance goals. The CSD runs several user groups, of which the main group provides consulting on system developments and fee changes. The CSD publishes sufficient information on its website, including tariffs, annual reports, regulations and laws, as well as the AGC and IOSCO questionnaires. It also makes ordinary operational statistics publicly available.

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### CSD-ON-CSD (CREDIT) RISK

The risk that VP takes when linking to another CSD.

VP SECURITIES has established links to the ICSDs, to support the settlement of Danish bonds, which are the

highest-volume instruments traded on Nasdaq Copenhagen. Euroclear Bank is also a direct DVP-link.

Among these categories, VP is mainly exposed to operational and legal risks. These risks are managed via legally-binding link agreements.

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### RISK MANAGEMENT POLICIES, PROCEDURES AND SYSTEMS

VP has established a Risk Operational model:

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#### CHART 10: RISK MANAGEMENT



The overall Risk Management Policy was approved by the Board of Directors on 8 December 2014. This policy is supported by additional policies and guidelines, as well as the security policy, which covers the risks related to IT and information systems.

The Risk Management Policy includes the implementation of the traditional three lines of defence:

**FIRST LINE OF DEFENCE**

**All operational units and subsidiaries.**

Each unit is responsible for internal administrative procedures, risk identification, risk assessment and internal control within the unit’s function area - ensuring decisions and execution.

Each unit holds the primary responsibility for the day-to-day risk management, including improving responsibility awareness and introducing goals for risk management within the unit’s functional area.

Ensuring risk management on a regular basis is assessed at the function area’s management meetings, where risk exposure is discussed and day-to-day operations are re-prioritised, based on effective risk analysis.

Risk management is incorporated in the initial phases of new projects and the establishment of new business areas.

**SECOND LINE OF DEFENCE**

**Risk & compliance, CEO, HR Finance.**

The risk & compliance function is responsible for the overall risk oversight, measurement, analysis and advisory services.

The function must conduct overall risk oversight of VP’s risk exposure, so that it can assess whether it is subject to adequate management, and ensure that all significant risks in VP are identified, measured, handled and reported accordingly.

The function ensures that the decisions of the Board of Directors and management group are sufficient. Furthermore, it reports on an ongoing basis to the management group and prepares the basis for the annual reporting to the Board of Directors concerning VP’s risk management.

**THIRD LINE OF DEFENCE**

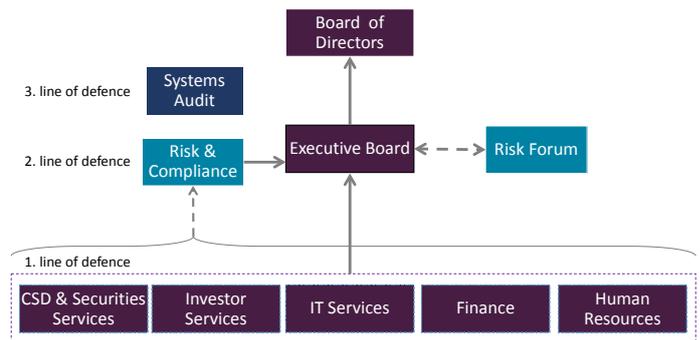
**Audits of Internal Systems, External Systems and Financials.**

The third line is responsible for independent risk oversight, auditing of second-line activities, critical business processes and internal controls.

It ensures that the policies and guidelines provided by the Board of Directors are reasonable with regard to VP’s business model.

The Board of Directors’ statements concerning VP’s risks are aligned by the system audit in accordance with the future auditing of VP.

**CHART 11: THREE LINES OF DEFENCE**



**RISK IDENTIFICATION**

VP has established a risk management system which is derived from a number of available models and inspiration from FERMA’s (Federation of European Risk Management Associations) Standard for Risk Management.

The risk management system includes the following model:

**CHART 12: RISK MANAGEMENT**



The initial risk identification and assessment processes were performed during workshops within each functional department, supported by VP’s Risk & Compliance function. During these workshops, risk handling and evaluation of potential residual risks were also documented.

Each functional department (first line of defence) revises its written procedures in order to ensure that their responsibilities related to risk management are in accordance with the risk policy.

### AGGREGATION OF EXPOSURE

This system includes a comprehensive risk register<sup>3</sup> based on the above model, including the impact, likelihood, measures, residual risk and priority for each identified risk. The risks and exposures are identified across VP's departments and functions.

Before initially setting up VP's operation and systems, exhaustive risk assessments were performed, resulting in a comprehensive report. The risks and exposures identified, as well as the controls suggested to handle these risks and exposures, were taken into account on establishing VP's operation and systems. The result is that relevant and effective controls have been built into the processes and systems and are therefore automated to a very great extent.

Interdependencies within the VP system have been defined and the necessary measures implemented in VP's automated production planning and operation system.

### MAINTAINING AND DEVELOPING THE MANAGEMENT POLICIES, PROCEDURES AND SYSTEMS

Responsibility for Strategies, as well as the overall Risk Management Policy, lies with VP's Board of Directors, while Guidelines and (underlying) Policies are handled by VP's day-to-day management. The business procedures and operations are matters that lie within the responsibility of the first line of defence.

The development and maintenance of risk management policies is handled by VP's Risk & Compliance function, and is subject to review by VP's Risk Forum before presentation to and approval by the Board of Directors.

### ASSESSMENT OF EFFECTIVENESS

This assessment is performed at various levels. The duties of VP's second line of defence are to monitor and evaluate effectiveness. Furthermore, VP's third line of defence performs audits and reviews, and ensures that the policies and guidelines provided by the Board of Directors are reasonable in relation to VP's business model.

Regarding the security policy and information security, VP takes part in ISF's (Information Security Forum) benchmarks, and the overall results of these benchmarks are presented to VP's Board of Directors.

### REVIEW

The overall Risk Management Policy is evaluated annually, taking due account of fluctuations in risk intensity, changing environments and market practices.

Other policies, as well as procedures, guidelines, etc. are reviewed and updated on a current basis, to ensure that they are up-to-date and address the relevant risks and exposures – and include the necessary measures to handle such risks and exposures.

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### KEY CONSIDERATION 2

An FMI should provide incentives for participants and, where relevant, their customers to manage and contain the risks they pose to the FMI.

The participant agreements include the statement that the participant is subject to VP's Articles of Association, business conditions, rules and guidelines. In this way, risk is clearly defined and anchored between the parties.

VP maintains a comprehensive set of guidelines for its participants, including a description of the measures and controls that a participant is required to implement and operate – as well as information concerning the basis for the performance of these measures and controls. The guidelines include information and instructions at a high level, and also at a very detailed level. These guidelines are available online to participants via VP's Customer Centre, which is part of VP's website.

On a current basis, VP also provides its participants with relevant information, which is available online, regarding clearing and settlement, including information on the status of trading instructions (instructed preadvices), access to liquidity and collateral, etc. This enables VP's participants to react and, on a timely basis, control possible risks that might affect their settlement.

VP has a sanction system in place for late settlement, and all participants with more than 500 share transactions per month are part of this model. Participants with a monthly

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<sup>3</sup> - Annex 1 includes the template for VP's risk register

average settlement rate lower than the benchmark will be reported to the custodian banks during the first days of the following month. If the client's average settlement rate is continuously lower than the benchmark for a 3-month period, VP will contact the agent bank in order to notify the client. If the average settlement rate has not improved during the following 3 months, VP will require a written statement from the client on the actions taken to improve the rate. Moreover, VP will call a meeting with the custodian and its client to set a timeframe for improvement and will send a warning of a potential fine if insufficient effort has been made to meet the deadline.

Participants – in their capacity as owners – are represented on VP's Board of Directors, which approves the overall Risk Management Policy.

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### KEY CONSIDERATION 3

An FMI should regularly review the material risks it carries from and presents to other entities (such as other FMIs, settlement banks, liquidity providers and service providers) as a result of interdependencies, and develop appropriate risk-management tools to address these risks.

### MATERIAL RISKS

Risks arising from links between VP and other FMIs are assessed on the basis of the applications on which the link is based. Emergency procedures between the central bank and VP are part of the written agreement between these parties. Emergency procedures between the central bank and VP are renegotiated as required.

VP performs monitoring of its service providers and has controls in place, including backup procedures and redundancy. Data transmission to and from VP is encrypted, and controls are in place to ensure that data is not lost.

VP monitors these risks on an ongoing basis, and the necessary alarms have been implemented to ensure that incidents, etc. are due to proper management and follow-up. Review of link agreements is primarily performed in the event of system or function changes.

### RISK MANAGEMENT TOOLS

VP has an Information Security Strategy and Information Security Policy that are updated and approved by Board of Directors at a yearly interval.

VP has an Information Security Strategy and Information

Security Policy that are updated and approved by the Board of Directors at a yearly interval. The principles in the Information Security Strategy describe how Information Security contributes to the Business Strategy and define VP's default approach to Information Security. Each strategic principle is described in a statement, a definition, the rationale and the implications.

The 12 Strategic Principles for Information Security at VP are:

- The Information Security Policy is communicated to everyone in VP
- The Information Security Policy is manifested in an Information Security Standard
- Information Security is managed by a specialised security department
- The security work is an integral part of all relevant activities
- Continuous improvement of security
- Information Security is compliance-, business- and risk-driven
- Access control arrangements use the principle of "least privilege"
- Audit trails are implemented in all relevant areas
- System development and maintenance are based on a quality-centric methodology
- Multiple layers of security controls are implemented throughout the information technology system
- Critical Facilities are physically protected from unauthorised physical access
- The Business Continuity Plan is continuously updated and tested

Information Security provides best value to VP's overall business by protecting Assets, Customers, Confidence, Compliance, Confidentiality, Integrity, Availability and Employees.

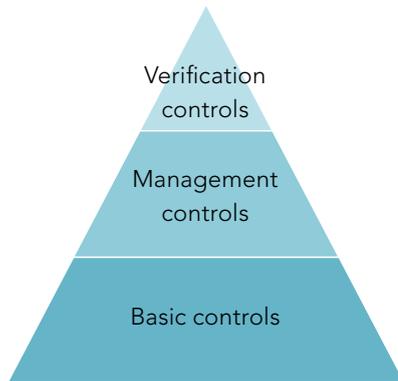
Information Security is managed by a specialised security department headed by a Chief Information Security Officer. VP Risk Forum supports the processing and prioritisation of information security issues based on risk and business value. CISO, CRO, CCO, CIO and CEO are members of the Risk Forum.

VP Information Security Controls are based on a three-level model:

- Verification Controls - Annual control of each area performed by the Security Department
  - Management Controls - Sample controls to test the basic controls
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- Basic Controls - The day-to-day processes

**CHART 13: VP 3-LEVEL CONTROL MODEL**



VP monitors the risks and exposures on an ongoing basis. Most of this monitoring is automated and includes a variety of alarms and reporting of incidents, etc.

Regarding service providers, the necessary reporting and follow-up are addressed via SLAs, including escalation procedures. VP receives annual statements from the service providers' independent auditors. These statements include evaluation of the risks and relevant controls.

#### **RECOMMENDATION FROM THE OVERSEERS**

VP should cooperate with participants, authorities and other entities to strengthen the identification and management of risks related to interdependencies across systems. VP has a robust framework for managing risks within VP and its own system, and this knowledge and experience are significant in relation to identifying, managing and monitoring risk that could potentially spread across systems within the financial sector.

#### **VP RESPONSE TO THE OVERSEER RECOMMENDATION**

Identification and management of risks have always been in focus at VP. Already in 1983, during the development of the VP system, a risk assessment of VP's security and control measures was performed by external parties on behalf of the supervisory authority.

In 1986, a comprehensive risk assessment of the VP system (processes and systems) was performed by external parties on behalf of the supervisory authority. This risk assessment included input from and evaluation by selected participants (7 banks, 7 savings banks, 4 traders, 2 mortgage banks, 4 data centres and 1 major customer).

The risks and underlying causes were grouped as follows:

- intentional interference
- problems related to law and regulation
- process related risks
- technical problems (defects in hardware and software, failure of utilities, deficiencies in data processing and loss of key participants)

VP implemented the necessary controls and countermeasures to counter the identified risks. VP's guidelines reflect these controls and countermeasures and include description of

- emergency procedures (including participants and data centers)
- contingency plan covering key points in case of disruptions in VP
- contingency plan covering key points in case of disruptions at participants or data centers

Ever since VP has continuously revisited and updated its security and control measures. A key element in case of disruptions is co-operation between all parties (including VP, participants, data centers and Danmarks Nationalbank).

VP is aware of its responsibilities within the financial sector and as such, VP ensures that communication exists between relevant parties. Communication between data centres is extensively described through VP's participant agreement and guidelines to mitigate any negative chain of circumstances from e.g. a default of a data centre. Participant agreements as well as VP's guidelines are kept up-to-date.

Finally, VP will also participate in sector-wide cooperation with regards to systemic sector-wide risks, cf. Principle 17, Key Consideration 7.

#### **KEY CONSIDERATION 4**

An FMI should identify scenarios that may potentially prevent it from being able to provide its critical operations and services as a going concern and assess the effectiveness of a full range of options for recovery or orderly winding-down. An FMI should prepare appropriate plans for its recovery or orderly winding-down based on the results of that assessment. Where applicable, an FMI should also provide relevant authorities with the information needed for purposes of resolution planning.

## SCENARIOS THAT MAY PREVENT AN FMI FROM PROVIDING CRITICAL OPERATIONS AND SERVICES

VP identifies scenarios that may potentially prevent VP from providing its critical operations and services by using risk assessment workshops which take account of the comprehensive risk register, as well as possible incidents. Risks are categorised under the following areas:

- External attacks
- Internal misuse and abuse
- Theft
- System malfunction
- Service interruption
- Human error
- Unforeseen effects of changes
- Dependencies of service providers
- Fraud
- Unavailability of payment systems

The risks identified are grouped according to VP's overall goals in relation to its resilience and measures to continue operations. These goals include:

- Business goals
- Compliance goals

Based on threats and vulnerability assessments, combined with a likelihood rating, the relevant risks are derived. These risks are then rated according to a rating scale between high and very low.

## RECOVERY OR ORDERLY WINDING-DOWN PLANS

In cooperation with the Danish FSA, a resolution plan will be established.

Until now, the current VP recovery framework has mainly focused on avoiding recovery. This is ensured by mitigating the negative impact of wrongful professional behavior or wrongful book-entry in the VP system, partly via rules on the limitation of VP's liability stated in the VP participation agreement, and partly via a regulatory framework in the Danish Securities Trading Act concerning the mitigation of VP's liability for wrongful book-entry.

VP has approximately DKK 100 million in equity and non-distributable reserves (DKK 40 million as share capital and DKK 60 million as various statutory reserves<sup>6</sup>). These reserves would enable VP to continue its operations for nine months, in the event of sudden market changes where VP has no or little income. VP's capital capability is pursuant to Section 82

of the Danish Securities Trading Act.

Furthermore, VP holds a guarantee in which all participants are obliged to participate. Pursuant to Section 2 of the 'Rules on the capital capability of VP SECURITIES Services', the size of the guarantee submitted under the security provided by the individual account controller is valid for one year at a time for the period from 1 April to 31 March, cf., however, Section 2(6). The guarantee is calculated on the basis of the account controller's total use of basic services in the calendar year preceding the aforementioned period, seen in relation to VP's total sale of basic services in the same calendar year, although as a minimum of EUR 100,000. If an account controller has not been connected to VP for a full calendar year, the size of the guarantee is decided on the basis of the account controller's estimated full-year consumption of basic services. This estimate is made by VP's Board of Directors, with final effect.

## VP RESPONSE TO OVERSEER RECOMMENDATION

VP has initiated the processes to establish adequate recovery and resolution plans to ensure continuity of VP's critical operations including:

- Summary providing overview of the plan and its implementation
- Identification of critical operations, stress scenarios and recovery tools
- Impact assessment related to affected stakeholders
- Assessment of legal enforceability

## RESOURCES

In general, all VP's liquidity is available to ensure the safety of the operation of the FMI. The amount available is sufficient 9 months of continuous operation.

VP does not offer CCP services and is therefore not exposed to participant default. Accordingly, VP does not operate a participant default guarantee fund or a similar waterfall risk mitigation instrument.

VP does not hold a banking license and is therefore not subject to international regulation of capital for credit institutions.

In response to the recommendation from the overseers, VP will take actions to provide its clients an easy accessible and readable guide in relation to procedures when one or more of its clients or a data center is subject to a prolonged technical problem.

# PRINCIPLE 7

## LIQUIDITY RISK

An FMI should effectively measure, monitor and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations, with a high degree of confidence, in a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the greatest aggregate liquidity obligation for the FMI in extreme, but plausible, market conditions.

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### KEY CONSIDERATION 1

An FMI should have a robust framework to manage its liquidity risks relating to its participants, settlement banks, nostro agents, custodian banks, liquidity providers and other entities.

VP settles in DKK and EUR and all settlements with VP are settled in central-bank money (interfaced settlement). The VP settlement does not use liquidity from settlement banks other than central banks, and VP does not manage cash accounts or offer cash liquidity itself. The main settlement activity in the VP SSS is overnight batch settlement, commencing from 18.00 p.m. on S-1.

Batch settlement exposes participants to implicit liquidity risk. The liquidity risk in the VP batch settlement is subject to various risk mitigation tools, in particular rules concerning margin (a requirement in the VP Clearing Rules for clearing participants to ensure additional cash liquidity of 2-4 per cent of their total net exposure in a settlement batch) and concerning auto-collateral.

Settlement via RTGS is processed in real-time (no sequencing or settlement optimisation algorithm applies) and the exposure to liquidity risk is accordingly low.

VP among other things monitors the liquidity risk profile of its participants during VP settlement. With regard to the bilateral liquidity risk exposure for participants in the VP settlement, this is monitored via the VP stress test program (semi-annual stress test scenarios which inter alia identify cash liquidity exposure vis-à-vis other participants in VP settlement).

The aggregate liquidity risk in groups (e.g. banks and mortgage-credit banks belonging to the same group) is subject to the VP stress-testing program. The same applies

with regard to clearing members offering tiered participation to other banks.

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### KEY CONSIDERATION 2

An FMI should have effective operational analytical tools to identify, measure and monitor its settlement and funding flows on an ongoing timely basis, including its use of intraday liquidity.

VP provides forecasting of each clearing participant's net cash liquidity position prior to each of the VP batch settlement processes. VP also offers public access (via its website) to the status of the processing of each of its settlement batch processes. After each settlement batch, each clearing member receives an update of the status of its transactions for settlement. This status includes settled transactions, as well as transactions post-poned for later settlement due to a lack of available securities or cash.

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### KEY CONSIDERATION 3

A payment system, or SSS, including one employing a DNS mechanism, should maintain sufficient liquid resources in all relevant currencies to effect same-day settlement, and where appropriate intraday or multiday settlement, of payment obligations with a high degree of confidence, under a wide range of potential stress scenarios, that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate payment obligation in extreme, but plausible, market conditions.

VP does not manage cash accounts or offer intraday liquidity to its clearing members and is therefore not itself exposed to liquidity risk. VP offers a number of liquidity optimisation tools to its clearing members, to help them mitigate their liquidity risk exposure to its counterparties. The most prominent liquidity optimisation tool is the VP auto-collateral system. Other liquidity optimisation instruments are liquidity forecasters, liquidity buffers (an additional 2-4 per cent liquidity buffer compared to total net cash positioning in settlement for certain asset classes). Most recently, the liquidity buffer was adjusted in 2014 to reflect demand from the VP user committee.

With regard to the liquidity risk management between participants, VP offers services that allow a cash provider to settle limits for its exposure vis-à-vis individual clients, and the VP net cash reporting informs any VP clearing member of

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its exposure, offering the member cash clearing services as primary cash clearing provider.

VP continuously monitors and evaluates the settlement rate of its batch settlement processes. This evaluation is discussed with customers during regular meetings in a dedicated user committee. The advice of the user-committee on inter alia optimisation of liquidity risk is normally implemented by VP via the introduction of new features or adjustment of its current features (e.g. the level of cash liquidity margin for batch settlement processing).

Besides stress-testing of its settlement system against failure with the single largest net cash settlement obligation, the VP stress-test program also assesses its members exposure to other relevant liquidity risk scenarios, e.g. exposure due to tiered participation (layered settlement) and CCP settlement.

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#### KEY CONSIDERATIONS 5-8

Key considerations 5-8 are not applicable to VP since VP does not manage cash accounts or offer intraday liquidity to its clearing members and is therefore not itself exposed to liquidity risk. Furthermore, the only source of liquidity VP uses is Danmarks Nationalbank (the Danish central bank).

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#### KEY CONSIDERATION 9

An FMI should determine the amount and regularly test the sufficiency of its liquid resources through rigorous stress testing. An FMI should have clear procedures to report the results of its stress tests to appropriate decision makers at the FMI and to use these results to evaluate the adequacy of and adjust its liquidity risk-management framework. In conducting stress testing, an FMI should consider a wide range of relevant scenarios. Scenarios should include relevant peak historic price volatilities, shifts in other market factors such as price determinants and yield curves, multiple defaults over various time horizons, simultaneous pressures in funding and asset markets, and a spectrum of forward-looking stress scenarios in a variety of extreme, but plausible market conditions. Scenarios should also take into account the design and operation of the FMI, include all entities that might pose material liquidity risks to the FMI (such as settlement banks, nostro agents, custodian banks, liquidity providers and linked FMIs), and where appropriate, cover a multiday period. In all cases, an FMI should docu-

ment its supporting rationale for, and should have appropriate governance arrangements relating to, the amount and form of total liquid resources it maintains.

VP's stress testing of liquidity exposure in its securities settlement focus on the overall liquidity in settlement (liquidity risk for other participants) in the event of the default of the participant with the largest single net cash position. This liquidity risk is not mitigated via liquidity resources at VP, but via liquidity resources at each participant (e.g. access to VP auto-collateral facilities).

The outcome of the VP stress test on inter alia liquidity risk stemming from the default of the participant with the largest single net cash position in the VP SSS is reported to the Head of Risk & Compliance, and the management and Board of Directors of VP Securities, on a semi-annual basis.

With regard to the VP risk management procedures on liquidity stress testing, VP performs semi-annual stress tests based on scenarios defined in the previous quarter. With regard to the risk assessment, the test scenarios are all discussed in advance with the overseer and regulator at quarterly meetings. The test scenarios are based on internal procedures at VP. The procedures are reviewed and updated on a regular basis equivalent to other operational procedures within VP. VP does not disclose the findings of its stress testing to its participants.

VP stress testing focuses on net settlement (BIS 3), as approximately 95 per cent in value terms is settled via net settlement procedures at VP.

On a semi-annual basis, VP assesses the effectiveness and appropriateness of its stress testing scenarios. Based on this regular assessment, VP decides whether the stress testing scenario will cover market stress situations and/or individual participant scenarios. With regard to updating the stress testing program and the VP internal procedures for the stress testing program, this follows the ordinary procedures for the review of internal procedures (typically annually).

VP's stress tests are discussed with overseers and regulators on a quarterly basis and its scope and the level of detail of its assessments are discussed quarterly with Danmarks Nationalbank in its capacity as overseer of the VP SECURITIES settlement system, and with the Danish FSA as regulator. VP validates its risk management scenarios and its stress testing

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system on a quarterly basis. Participants are not part of the stress testing program, due to the confidential nature of the stress testing in the Danish market, which is highly concentrated on a few large banks. VP does not currently compare its stress testing with other CSDs, but this has been discussed in relevant ECSDA working groups.

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#### KEY CONSIDERATION 10

An FMI should establish explicit rules and procedures that enable the FMI to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations on time following any individual or combined default among its participants. These rules and procedures should address unforeseen and potentially uncovered liquidity shortfalls and should aim to avoid unwinding, revoking, or delaying the same-day settlement of payment obligations. These rules and procedures should also indicate the FMI's process to replenish any liquidity resources it may employ during a stress event, so that it can continue to operate in a safe and sound manner.

Due to market consensus, 95 per cent of all settlement settles in s-1 at around 6:00 p.m. In the event of the default of a participant, the participant's instructions for settlement will be removed. Other settlement instructions for settlement in the same settlement batch will be settled as intended, if possible, and any non-settled instructions will be recycled in the following settlement batches (VP offers a multi-batch settlement system that includes two additional overnight batches after the 6:00 p.m. batch cycle, prior to the normal date time settlement procedures).

Unforeseen liquidity shortfalls are mitigated via the VP liquidity buffers and auto-collateral features. Due to the design of the VP settlement system, unwinding is not possible (all settlement is protected by the settlement finality rules on inter alia entry of instructions, irrevocability and finality of settlement).

All instructions are irrevocable after matching, which is in accordance with international best practice for securities settlement systems.

In practice, the removal of a default participant's instructions from settlement does not delay a settlement batch significantly, and any delay will be mitigated by the design of the VP settlement system (early settlement on s-1).



# PRINCIPLE 8

## SETTLEMENT FINALITY

An FMI should provide clear and certain final settlement, as a minimum by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time.

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### KEY CONSIDERATION 1

An FMI's rules and procedures should clearly define the point at which settlement is final.

### POINT OF SETTLEMENT FINALITY

It follows from Section 57 c(1) of the Danish Securities Trading Act that the rules of the VP SSS decide when a transfer order is to be considered to have been entered to the system (the moment of entry), and the point(s) in time after which a registered transfer order can no longer be revoked by a participant or a third party (the moment of irrevocability).

It follows from VP's Clearing Rules, page 8, that when both parties to a trade transaction have reported instructs with coinciding validity periods, the reporting will be binding and will be considered to have been concluded in the system. Simultaneously, the transaction cannot be unilaterally cancelled or revoked by either the participant or a third party. The transaction is thus 'ready for settlement'. At that time, the transfer orders are thus considered to have been entered to the VP SSS and to be bankruptcy-remote as well as irrevocable (the moment of entry and the moment of irrevocability of transfer orders occur simultaneously).

With regard to the point of settlement finality, most securities transactions are settled in the VP SSS via overnight net settlement procedures. The point of settlement finality is defined in the VP Clearing Rules (pages 11-12), which state that a trade transaction for settlement in the VP SSS in a net settlement block is finally and irrevocably completed when the settlement block in which the pertinent transaction is settled is completed. A net settlement block is completed as of the posting on a net basis of the trade amount, etc. and the crediting or debiting of the affected securities accounts (book-entry), cf. 'The effectuation of settlement'. The trade transactions in question will attain legal effect as at the legal effect time specified for each of the net settlement blocks in question. Securities transactions may also be settled in the VP SSS via real-time gross settlement (RTGS) procedures. An RTGS trade transaction is finally and irrevocably completed when the relevant securities have been transferred to the buyer with the time of legal effect as of the binding report-

ing of the transaction.

With regard to the settlement finality of securities issued outside VP and settled in the VP SSS (VP acting as investor-SSS), the VP Clearing Rules also apply to such securities with regard to the moment of entry, the moment of irrevocability and the moment of settlement finality. Securities transfers via links for settlement in the VP SSS are final and irrevocable, since registration (book-entry) of rights in securities issued by another CSD on securities accounts with VP does not take place until after final transfer of the securities to the omnibus account held by VP in the CSD where the securities are issued. VP currently mainly acts in its capacity as investor SSS for Eurosystem-eligible securities issued by VP LUX and transferred to securities accounts with VP via the link between VP and VP LUX.

Transfer orders are protected from the insolvency proceedings of the instructing participant when the instruction enters the VP SSS (please see the answer above concerning the moment of entry), cf. Sections 66 and 69 of the Danish Securities Trading Act. Transfer orders which, prior to a participant's insolvency proceedings (i.e. a participant's failure to meet its obligations), have been reported to VP for settlement will be settled in accordance with the VP Clearing Rules.

Settlement in VP can occur in three different situations:

1. Domestic settlement in the VP securities settlement system between two VP clearing members
2. Domestic settlement in the VP securities settlement system between a VP clearing member and another CSD (link transactions with VP acting as issuer SSS)
3. Foreign settlement in the securities settlement system in another CSD (link transactions with VP acting as investor SSS)

With regard to foreign settlement, settlement finality is regulated in the rules of the issuer SSS.

### FINALITY IN THE CASE OF LINKS

- a. Finality between VP and LVPS
 

In the case of settlement of link transactions in the VP settlement system (VP acting as issuer SSS), settlement finality follows the VP clearing rules under identical terms to other participants in the VP settlement (the VP clearing rules are part of the contractual framework with
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VP link partners). The cash leg in the VP settlement system settles in central bank money with Danmarks Nationalbank. VP's link partners are obliged to appoint a dedicated cash account for settlement with Danmarks Nationalbank (as regards settlement in DKK) and/or with a Eurosystem central bank (as regards settlement in EUR). The cash account may be opened in the name of the link partner (depending on the legal status of the investor SSS and the domestic central bank rules on access to settlement accounts), or via a local custodian bank with access to such cash accounts.

- b. The relation between the finality of obligations in the CCP and the finality of the settlement of the CCP claims and obligations in other systems

CCPs may act as clearing members with VP (this is the case for e.g. European CCP, which is currently the only CCP instructing for settlement with VP) and this capacity is subject to the VP clearing rules on identical terms to other participants. The VP clearing rules contain provisions for partial settlement, which are specific to clearing members acting as CCPs.

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### KEY CONSIDERATION 2

An FMI should complete final settlement by no later than the end of the value date, and preferably intraday or in real time, to reduce settlement risk. An LVPS or SSS should consider adopting RTGS or multiple-batch processing during the settlement day.

### FINAL SETTLEMENT ON THE VALUE DATE

VP offers RTGS (DKK/EUR), as well as batch settlement procedures that allow for same-day settlement. Parties may instruct for settlement immediately prior to settlement in a VP batch and may instruct for settlement at any time for RTGS during the relevant opening hours for VP and the relevant central bank.

### INTRADAY OR REAL-TIME FINAL SETTLEMENT

VP offers intraday DvP-settlement via a combination of RTGS settlement and multiple-batch processing. The VP settlement system informs participants about completion and lack of completion of all instructions sent for settlement (the vp.INFO system).

On each 24-hour settlement day starting at 6:00 p.m., VP processes four net settlement batches for securities instruc-

tions for settlement in DKK or EUR. The batches are normally processed and take legal effect from the following times: 6:00 p.m., 00:35 a.m., 07:05 a.m. and 2:15 p.m. (for further information, please see the VP Clearing Rules, page 5). EUR settlement during overnight batches is initially settled in DKK and subsequently converted into EUR in a payment-versus-payment batch at 10:00 a.m. VP also processes two net settlement batches for securities instructions for settlement in DKK with legal effect times at 10:15 a.m. and 00:00.

According to the VP Clearing Rules, transactions which do not settle due to a lack of securities or funds will be postponed for inclusion in the next-following settlement batch in which trade transactions in the reported currency (DKK or EUR) are settled.

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### KEY CONSIDERATION 3

An FMI should clearly define the point after which unsettled payments, transfer instructions or other obligations may not be revoked by a participant.

The trade transactions are finally and irrevocably completed and attain legal effect as follows:

### NET SETTLEMENT

A trade transaction for settlement in a net settlement batch is finally and irrevocably completed when the settlement batch in which the pertinent transaction is settled is completed. A net settlement block is completed as of the posting on a net basis of the trade amount, etc. and the crediting or debiting of the affected securities accounts (book entry), cf. 'The effectuation of settlement'. The trade transactions in question will attain legal effect as at the time of legal effect specified for the net settlement batch in question, cf. 'Introductory provisions'.

### RTGS

An RTGS trade transaction is finally and irrevocably completed when the pertinent securities have been transferred to the buyer with the time of legal effect as of the binding reporting of the transaction.

Settlement practices in the VP system:

- The following accepted market practice will apply: all trade transactions for which, unless otherwise agreed between the parties, no specific settlement block has
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been designated, shall have been reported for settlement and, if possible, matched prior to batch 10, the intention being to complete the greatest possible proportion of settlement as early as possible in the 24-hour settlement period, in the interests of the participants and the overall functionality of the settlement system -including flexible and efficient international settlement.

- In each settlement batch, all trade transactions that have been reported for settlement will have net cover in terms of securities. The requirement of net cover in terms of securities with respect to the individual settlement batches will ensure that late deliveries by a participant do not adversely affect the overall settlement process, or other participants in the settlement process.
- In each individual settlement batch, net purchases must have cash cover. On determining its financing requirements, the participant must include an appropriate liquidity buffer and allow for reservations made in the VP system for the administration of collateral in connection with clearing and payment systems, so as to ensure that the participant can generally accommodate situations where transactions are not completed as expected, due to non-delivery.
- Participants who fail to include a sufficient liquidity buffer and therefore overdraw their cash accounts will incur a sanction. Calculated over a period comprising the immediately preceding 6 months, the sanction for the first four instances of overdrawing will be DKK 5,000, DKK 10,000, DKK 20,000 and DKK 20,000, respectively, and thereafter DKK 50,000 for each subsequent instance of overdrawing.
- The mutual agreement between the participants concerning settlement practices (i.e. that all trade transactions with respect to which no specific settlement block has been designated – unless otherwise agreed between the parties - must be reported for settlement and, if possible, matched prior to batch 10), as well as the professional rules concerning interest claims and the section of VP's Clearing Rules not affected by the present set of rules, will constitute the complete set of rules governing settlement practices in the Danish securities market.

Instructions may be cancelled via bilateral revocation (cancellation) from the instructing parties until actual settlement takes place.

VP does not allow for exceptions from the revocation rules as defined in the VP Clearing Rules. The Clearing Rules are publicly available on the VP website.

## PRINCIPLE 9 CASH SETTLEMENT

An FMI should conduct its money settlements in central-bank money where practical and available. If central-bank money is not used, an FMI should minimise and strictly control the credit and liquidity risk arising from the use of commercial bank money.

### KEY CONSIDERATION 1

An FMI should conduct its money settlements in central-bank money, where practical and available, to avoid credit and liquidity risks.

Money settlement in DKK is conducted in central-bank money via individual settlement accounts for the direct participants on the books of Danmarks Nationalbank (the central bank). Settlement in EUR is conducted in the TARGET2 system (VP operating as TARGET2 ancillary system via Danmarks Nationalbank).

VP operates a combined batch settlement system (DvP BIS model 3) and RTGS settlement system (DvP BIS model 1), which allows participants to settle any of their securities operations with intraday finality on all opening days for all operations in securities eligible for settlement at VP (equity, fixed income, investment funds, and listed as well as OTC instruments).

Securities can settle in one of six daily net settlement batches, or on a (real-time) gross basis during the day. Gross settlement applies solely to trades between participants which also act as primary cash providers, and only to trades on their own behalf. Most trades settle in the first batch (VP10), which is already completed shortly after the beginning of the 24-hour settlement period, at 6:00 p.m. The net settlement batches are designed to optimise settlement efficiency in VP's links to other CSDs, especially the link to Euroclear Bank. Two Euroclear Bank settlement batches are placed between VP10, VP20 and VP30. This enables participants to move securities back and forth between VP and Euroclear Bank within the 24-hour settlement period.

VP also offers settlement in other currencies than DKK and EUR in commercial bank money. This feature is limited to settlement of single-priced investment funds for which settlement in central bank is neither practical nor available. The total volume of commercial money settlement in VP in 2013 was less than 1 per cent of the total settlement in central bank money in VP and is therefore not described further in this disclosure.

### KEY CONSIDERATION 5

An FMI's legal agreements with any settlement banks should state clearly when transfers on the books of individual settlement banks are expected to occur, that transfers are to be final when effected, and that funds received should be transferable as soon as possible, as a minimum by the end of the day and ideally intraday, in order to enable the FMI and its participants to manage credit and liquidity risks.

VP's settlement in DKK is regulated by its settlement agreement with Danmarks Nationalbank. Settlement of securities transactions in DKK is final when effected and the funds received are transferable.

VP's settlement in EUR is regulated in its settlement agreement with Danmarks Nationalbank (Target2 ACI). Settlement of securities transactions in EUR is final when effected and the funds received are transferable, see our answer to P12.

With regard to settlement in DKK and EUR, the funds received are transferable immediately after the settlement during the opening hours of the central bank.



# PRINCIPLE 11

## CENTRAL SECURITIES DEPOSITORIES

A CSD should have appropriate rules and procedures to help ensure the integrity of securities issues and minimise and manage the risks associated with the safekeeping and transfer of securities. A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry.

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### KEY CONSIDERATION 1

A CSD should have appropriate rules, procedures and controls, including robust accounting practices, to safeguard the rights of securities issuers and holders, prevent the unauthorised creation or deletion of securities, and conduct periodic and at least daily reconciliation of the securities issues it maintains.

All securities issued by VP are issued in dematerialised form by debiting a general ledger account and crediting the issuer's securities account with VP. The integrity of the issuer is assured by the design of and the legal framework for the VP general ledger (the Danish Securities Trading Act and the VP rules and regulations for book entry), which gives the issuer the exclusive right to credit and debit the general ledger, as well as for reconciliation between the general ledger and the total amount of securities held on accounts with VP.

Rights of issuers and holders of securities issued by VP are enshrined in the Danish Securities Trading Act, as well as in the legal doctrine for proprietary securities rights.

Securities are issued on segregated accounts (the general ledger) and thereby provide accounting vis-à-vis the issuer. Securities are held on segregated accounts (investor accounts) and thereby provide appropriate accounting vis-à-vis investors. All book-entry at VP is based on double book-entry principles and realignment between securities accounts.

VP applies double book-entry principles to all crediting and debiting of any of its securities accounts, as well as its general ledger account. VP does not currently hold securities in physical form (immobilisation) and therefore does not reconcile its securities holdings vis-à-vis any physical securities entities. End-to-end audits are performed on an ongoing basis via the automated IT system, as well as by external auditors according to domestic book-entry rules and regulations and the VP SECURITIES rules on external auditing.

The rules concerning the issuance of securities provide an exclusive right for the issuer and its issuer intermediary to credit or debit the issuer's general ledger with VP. This exclusive right is backed by the VP procedures and internal controls, including the authorisation system, which ensures that crediting and debiting are only performed by authorised entities. The rules and regulations<sup>4</sup> for the issuance of securities at VP are regulated in an issuance agreement, which is publicly available on VP's website. For further information concerning the authorisation, see our answer to principles 17 and 18.

VP reconciles its securities issuance on any of its general ledger accounts upon any crediting or debiting of the accounts, as well as the weekly reconciliation of the general ledger against the total securities held on accounts with VP, and the day-to-day reconciliation with links held at VP.

The VP reconciliation procedures on the issuer's general ledger are specified in the technical guidelines. For realignment of links, the reconciliation service level may be regulated by the contractual terms in the link agreement.

For securities issued by another CSD than VP and held on securities accounts at VP, VP will open an account with the other CSD (link agreement) and book-enter its securities to its own system via a technical issuance. This technical issuance follows the same rules as for the issuance of securities at VP vis-à-vis issuers of securities issued by VP. The ultimate issuer of the securities is the issuer CSD and VP therefore reconciles its technical issuer account against the issuer CSD books on a daily basis.

With regard to the registrar services, no registrar in the Danish market provides issuance of securities and is therefore not involved in assuring the integrity of the issuer.

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### KEY CONSIDERATION 2

A CSD should prohibit overdrafts and debit balances in securities accounts.

The design of the VP book-entry system prohibits debit balances on securities accounts (no contractual securities issuance is technically possible).

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<sup>4</sup> - Public available on <https://www.vp.dk/en/About-VP/Legal-framework/Participation>

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### KEY CONSIDERATION 3

A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry. Where appropriate, a CSD should provide incentives to immobilise or dematerialise securities.

All securities at VP are currently issued in dematerialised form (100 per cent).

In principle, securities may be issued in physical form and book-entered to VP (immobilisation). Currently this does not apply to any securities issued by VP (0 per cent).

Issuance in dematerialised form has been mandatory for listed equities and bonds in the Danish market since 1988. Market practice in the Danish market has expanded the scope of dematerialised securities to also cover the majority of unlisted bonds, equities and unit fund certificates issued in the Danish capital market. Dematerialisation or immobilisation is mandatory to achieve protection of the investor's securities rights according to the VP settlement and safe-keeping procedures.

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### KEY CONSIDERATION 4

A CSD should protect assets against custody risk through appropriate rules and procedures consistent with its legal framework.

The design of the VP system ensures a full audit trail and control of the authorisation of any crediting or debiting of accounts with VP (general ledger accounts, as well as securities accounts).

In the event of CSD negligence, misuse, etc., investors' interests in the securities are protected by a combination of the VP legal framework (right in rem protection of investors' rights in securities) and the VP risk mitigation framework (participant guarantee contracts and a professional liability insurance contract).

VP is liable for any loss resulting from errors in connection with the book entry, alteration or cancellation of rights concerning accounts or payments related to accounts, even if such errors are fortuitous, i.e. strict liability, cf. Section 80 of the Danish Securities Trading Act. If an error can be ascribed to an account controller, e.g. operating a direct link

from an investor SSS to VP, the strict liability rests with the account controller, cf. Section 81 of the Act.

This strict liability in damages, which covers the book entry of rights in VP by collateral takers, is backed up by a Participant Guarantee Scheme with a total value of currently DKK 1.1 billion, cf. the Danish Securities Trading Act, Section 82. The liability of Danish account controllers is backed by joint and several liability between these institutions, cf. Section 81 of the Danish Securities Trading Act. However, the total damages pursuant to these schemes for any loss resulting from the same error may not exceed DKK 500 million.

For further information about the VP custody risk mitigation, see our answer to principles 3 and 17 (operational risk), and principle 1 (legal risk).

VP's core activities and agreements are subject to and based on the Danish Securities Trading Act, as well as market standards. VP's written agreements are subject to annual review, and reviewed as seen fit (e.g. unclarity pointed out by participants). The rules and procedures followed by VP are under the surveillance of Danmarks Nationalbank and the Danish FSA, and are assessed on an ongoing-basis via user dialogue and via VP's ownership by its users.

VP does not hold physical securities and is therefore not exposed to risk in the event of misappropriation, destruction, etc. With regard to the incorrect book-entry of securities issued by or held on accounts in VP, VP is subject to a strict liability regime covered by the VP participant agreement scheme and insurance contract.

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### KEY CONSIDERATION 5

A CSD should employ a robust system that ensures segregation between the CSD's own assets and the securities of its participants, and segregation among the securities of its participants. Where supported by the legal framework, the CSD should also operationally support the segregation of securities belonging to a participant's customers on the participant's books, and facilitate the transfer of customer holdings.

VP offers a book-entry system designed for professional as well as retail market transactions (end-investor securities accounts). This design allows for the ultimate segregation of securities at end-investor account level as well as on omni-

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bus accounts. With regard to the securities held on omnibus accounts, the Danish Securities Trading Act requires the segregation of banks' securities from their clients' securities.

VP's own assets (a very limited number of fixed income bonds) are held on segregated accounts which are held by a bank acting as account controller for VP.

Segregation within the VP system is provided by operational segregation (no contractual segregation applies to securities held with VP). Any transfer between securities accounts at VP is performed via book entry (mainly in the VP settlement system).

The nature of entitlement to securities held at VP is a proprietary interest in the form of a right in rem. The only perfection requirement is that rights to securities must be registered by book-entry to VP/a CSD, cf. Section 66 of the Danish Securities Trading Act. In the event of registration to an omnibus account, the rights must also be registered by the account controller.

In the event of the insolvency of VP or any third party, e.g. an account controller, the securities held in a segregated account with VP will not be included in the bankruptcy estate of either VP or an account controller.

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#### **KEY CONSIDERATION 6**

A CSD must identify, measure, monitor and manage its risks from other activities that it may perform; additional tools may be necessary in order to address these risks.

VP provides a number of services which are ancillary to its core-services, including registrar services, AGM/proxy voting services and trustee services. All ancillary services at VP are provided via separate legal entities and accordingly the risks from these activities are separated from VP's core-services, including the issuance of securities.



# PRINCIPLE 12

## EXCHANGE OF VALUE SYSTEMS

If an FMI settles transactions that involve the settlement of two linked obligations (for example, securities or foreign exchange transactions), it should eliminate principal risk by making the final settlement of one obligation conditional upon the final settlement of the other.

### KEY CONSIDERATION 1

An FMI that is an exchange-of-value settlement system should eliminate principal risk by ensuring that the final settlement of one obligation occurs if and only if the final settlement of the linked obligation also occurs, regardless of whether the FMI settles on a gross or net basis and when finality occurs.

Cash settlement in DKK at Danmarks Nationalbank can, in relation to the VP System, only take place if the participant has been approved for this purpose by Danmarks Nationalbank and has established the required accounts at Danmarks Nationalbank.

Such participants will participate in VP under the function category of 'primary cash provider'.

Most trades are settled in net settlement batches on T+2. Trades are netted multilaterally before a settlement batch in accordance with BIS DvP model 3. VP's 24-hour settlement day begins at 6:00 p.m. and ends just before 6:00 p.m. on the following banking day. During each 24-hour settlement day, VP conducts six net settlement batches for securities trades with legal effect from the following times: 6:00 p.m., 00:35 a.m., 07:05 a.m., 10:15 a.m., 12:00 noon and 2:15 p.m. Trades can also be settled on a gross basis between 8:00 a.m. and 3:00 p.m. in accordance with BIS DvP model 1, in both Danish kroner and euro. In the first three batches, transactions in both Danish kroner and euro are settled, while the fourth and fifth batches are in kroner only, and the last batch in euro only.

CHART 14: EXAMPLE OF BATCH SETTLEMENT

Activity	Legal effect	Schedule	Start	End	Remarks
Redemption		18:00	18:01	18:10	
Batch 10 DKK/EUR	18:00		18:10	18:48	264,648 trades
Batch 20 DKK/EUR	00:35		01:06	01:16	2,880 trades
Batch 30 DKK/EUR	07:05		07:05	07:14	2,488 trades
Batch 35 DKK		09:15	09:15	09:19	
Batch 33 DKK/EUR		10:00	10:00	10:06	
Batch 40 DKK	10:15		10:15	10:27	2,890 trades/Overdraft
Batch 60 DKK	12:00		12:00	12:11	1,509 trades
Batch 45 EUR		12:05	12:05	12:10	
Allocation of rights	12:30		12:30	12:31	
Batch 65 ISK		12:45	12:45	12:49	
Batch 50 EUR	14:15		14:15	14:27	528 trades
Batch 55 SEK		14:15	14:15	14:19	

Prior to the settlement at VP, the participant will inform Danmarks Nationalbank of such participant's drawing facility requirements in DKK, in accordance with Danmarks Nationalbank's rules in this respect. Based on this information, Danmarks Nationalbank will electronically communicate to VP the participant's maximum drawing facility with respect to the subsequent settlement block. In so doing, Danmarks Nationalbank guarantees that any drawing in the subsequent settlement (including the drawing on euro accounts as converted into DKK by VP) which does not exceed the notified maximum drawing facility, will be paid for the account of the participant. This delivery vs. payment eliminates principal risk<sup>5</sup>.

With regard to the RTGS, finality of settlement occurs upon actual book-entry of the securities instruction in the VP SECURITIES system. VP will ensure via its RTGS procedure that funds are only transferred if the simultaneous cash transactions take place in cash accounts with the central bank. This is ensured via blocking of the securities until VP receives confirmation of delivery from the central bank, after which will VP unblock the securities and transfer them to the securities account allocated by the buyer.

With regard to the finality of net settlement with VP, finality occurs at a designated time defined in law. This finality occurs simultaneously with all securities instructions that settle in the net settlement batch (further elaborated on under principle 8).

In the event of reporting of rights in securities which are blocked during an RTGS process, the right will be registered in the VP book-entry system and in accordance with a time stamp attached to the instruction. Therefore, as soon as the blocking is lifted, the securities will be available for attachment of rights in securities.

5 - VP's clearing rules, pp. 17-18

# PRINCIPLE 13

## PARTICIPANT DEFAULT RULES AND PROCEDURES

An FMI should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures should be designed to ensure that the FMI can take timely action to contain losses and liquidity pressures and continue to meet its obligations.

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### KEY CONSIDERATION 1

An FMI should have default rules and procedures that enable the FMI to continue to meet its obligations in the event of a participant default and that address the replenishment of resources following a default.

### PARTICIPANT DEFAULT RULES AND PROCEDURES

A participant is considered to have defaulted if it no longer fulfils the requirements of access to VP (e.g. re-requirement for a licence as an EU/EEA bank or broker). Additionally, according to Section 54.5 of the Danish Securities Trading Act, a clearing member with VP that grossly or repeatedly breaches its obligations as a clearing member is considered to be in default. According to Section 64.4 of the Danish Securities Trading Act, in the event of the insolvency, etc. of a securities account controller (normally a bank managing the securities owners' securities accounts at VP), VP will be obliged to initiate default procedures against the participant.

Participants may be unable to fulfil their financial obligations (i.e. unable to effect payment on time) due to operational disruptions, such as the failure of their information technology systems. Where there is a risk of breakdown or a similar event because conditions specified in guidelines, regulations and/or appendices have not been strictly observed by the client/Data Centre, or where other security considerations make this necessary, VP will be entitled and obliged to take such measures as VP deems appropriate – if necessary by discontinuing the communication with the participant. So far this has not been deemed necessary by VP. These actions are discretionary.

With regard to the default of a clearing member, VP will have a discretionary right to terminate the participation agreement with the clearing member in default. Under Danish contract law, VP may also impose less restrictive remedies in the event of breach prior to termination of the participant agreement.

A detailed description of VP's procedures in the event of the default of a clearing member is publicly available on VP's website. With regard to the default of a securities account controller, VP is obliged, under Section 64.4 of the Danish

Securities Trading Act, to terminate the participation with the securities account controller and ensure the transfer of securities accounts maintained by the securities account controller to another securities account controller (alternatively, VP is obliged to take over the securities account controller management itself for a period up to 4 months).

In the event of any breach of contract with a securities account controller, VP will inform the Danish FSA.

VP does not directly monitor its participants. VP will be automatically notified if a participant, for technical/operational reasons, is unable to deliver according to its obligations, since VP will be unable to deliver data back to the participant. VP would then seek to contact the participant to get insight into the problem. VP is responsible for its own systems only; hence VP only monitors its own systems.

Notification will be sent out to relevant function areas in VP and, ultimately, the management group, while VP's systems will continue unaffected.

VP will report information to overseers and regulators if this has affected the SSS.

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### KEY CONSIDERATION 2

An FMI should be well prepared to implement its default rules and procedures, including any appropriate discretionary procedures provided for in its rules.

VP has internal plans that clearly define the roles and responsibilities in the event of the default of a VP participant. These procedures are specific to each service category (clearing members, securities account controllers and issuers).

In the event of the default of a VP participant, VP may communicate to its stakeholders via a VP broadcast, via email, or ultimately via press release (the normal procedure will be information to the market via a VP broadcast).

The internal plans within VP to address a default are updated continuously, reflecting experience from practical default management, regulatory requirements or compliance requirements.

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### KEY CONSIDERATION 3

An FMI should publicly disclose key aspects of its default rules and procedures.

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With regard to the default of a VP SECURITIES account controller, procedures are defined in Section 64.4 of the Danish Securities Trading Act, which is publicly available via a link on the VP-website. In the event of default by a securities account controller, VP is obliged to terminate the participation agreement and consequently stop the access for the securities account controller to effect book-entry with VP. Unless otherwise agreed, VP must subsequently take over the reporting of transactions for book-entry to the affected accounts for a period of no more than four months, following which the book-entries of the account holder will be transferred to an account with the individual issuer.

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#### KEY CONSIDERATION 4

An FMI must involve its participants and other stakeholders in the testing and review of the FMI's default procedures, including any close-out procedures. Such testing and review must be conducted at least annually, or following material changes to the rules and procedures, to ensure that they are practical and effective.

VP's default procedures consist of procedures to address operational disruptions by its participants and other stakeholders, as well as procedures to address default by participants and other stakeholders.

With regard to the review of the VP default procedures, the VP default procedures in the event of default by a participant are described in a publicly available memo concerning VP's reaction in the event of insolvency proceedings, including the VP netting and close-out procedures. This memo was written in cooperation with VP clearing member banks active as sub-custodians in the Danish market, to reflect demand from their clients for clarification of the VP default procedures. With regard to the testing of the VP default procedures, VP has not so far involved its participants in formal testing of its default procedures, as the VP default procedures have in practice been applied to banks acting as clearing members and account controllers on several occasions in recent years. In Denmark, bank default is mainly managed via a public recovery company ("Finansiel Stabilitet") established in October 2008, as part of an agreement between the Danish State and the Danish banking sector (the Private Contingency Association) for a scheme to secure financial stability. The agreement was reached in response to the international financial crisis and its impact on the financial sector.

Finansiel Stabilitet is a public limited liability company owned by the Danish State via the Ministry of Business and Growth. The company's activities are governed by the Act on Financial Stability and the Financial Business Act, and executive orders issued pursuant thereto. In addition, the company is subject to special provisions regarding state-owned public companies. The objects of Finansiel Stabilitet are to wind up banks taken over under the Bank Package (Bank Package I), wind up banks taken over under the Exit and Consolidation Packages (Bank Package III and Bank Package IV, respectively), and manage individual government guarantees under the Credit Package (Bank Package II). Since 2008, 12 banks acting as clearing members and/or account controllers with VP have been taken over by Finansiel Stabilitet. In the event of such takeover, VP is informed of the takeover and VP thereafter updates the relevant static data in its customer database. These takeovers took place in 2008 (1 bank), 2009 (3 banks), 2010 (3 banks), 2011 (3 banks) and 2012 (2 banks). The last time VP managed the default of a bank according to its default procedures was in 2008 (prior to the establishment of Finansiel Stabilitet).

#### RECOMMENDATION FROM THE OVERSEERS

VP should develop a general guide for participants describing the likely sequence of acts performed by VP if of one or more participants, or a data centre, is the subject of prolonged technical default, and thereby unable to perform timely settlement. The guide should be anchored in VP's internal procedures and should, among other things, disclose in which situations VP will be able to perform discretionary procedures. The guide should be available to VP participants on VP's website. Furthermore, VP should test its procedures with regard to the default of a participant, settlement and shutdown. These tests should involve participants, authorities and possibly other entities.

#### VP RESPONSE TO OVERSEER RECOMMENDATION

The consequences of a defaulting participant have been one of the main focal points since the decision was made to establish VP in the early 1980s. Since then, it has remained a main focal point and as such is subject to consideration in many aspects of VP's systems, agreements, guidelines, etc.

A comprehensive description can be found in Chapter 15 of VP's System Guidelines. In response to the recommendation from the overseers, VP will take actions to provide its clients an easy accessible and readable guide in relation to procedures when one or more of its clients or a data center is subject to a prolonged technical problem.

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# PRINCIPLE 15

## GENERAL BUSINESS RISK

An FMI should identify, monitor and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialise. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.

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### KEY CONSIDERATION 1

An FMI should have robust management and control systems to identify, monitor and manage general business risks, including losses from poor execution of business strategy, negative cash flows, or unexpected and excessively large operating expenses.

VP defines general business risk as the risk of potential losses stemming from errors or wrongful professional services during VP's day-to-day operations as a CSD.

VP's day-to-day operations as a CSD include VP's core services (issuance, clearing & settlement and safekeeping of securities). VP's core services are to a very great extent operated by banks, due to the decentralised infrastructure applied in the Danish CSD market, where securities accounts are held by banks in their capacity as securities account controllers or issuer agents, but legally held with VP. To a limited extent, VP also offers services as issuing agent, securities account controller or custodian for clients that do not maintain these services themselves, either due to a lack of access (e.g. CSD link partners) or their business model (outsourcing of back-office services to VP).

For each business unit at VP, VP's services are described in manual procedures which are updated on an ongoing basis. VP's services are assessed annually via a general VP service review, prior to the annual VP budget process.

VP's risk and compliance officer assesses VP's risks, including business risk, on an ongoing basis, in cooperation with the rest of the organisation. Please see Principle 3 for a comprehensive description of how VP manages risk.

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### KEY CONSIDERATION 2

An FMI should hold liquid net assets funded by equity (such as common stock, disclosed reserves or other retained earnings) so that it can continue operations and services

as a going concern if it incurs general business losses. The amount of liquid net assets funded by equity an FMI should hold should be determined by its general business risk profile and the length of time required to achieve a recovery or orderly wind-down, as appropriate, of its critical operations and services if such action is taken.

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### KEY CONSIDERATION 3

An FMI should maintain a viable recovery or orderly wind-down plan and should hold sufficient liquid net assets funded by equity to implement this plan. As a minimum, an FMI should hold liquid net assets funded by equity equal to at least six months of current operating expenses. These assets are in addition to resources held to cover participant defaults or other risks covered under the financial resources principles. However, equity held under international risk-based capital standards can be included where relevant and appropriate to avoid duplicate capital requirements.

### RECOVERY OR ORDERLY WIND-DOWN PLAN

In cooperation with the Danish FSA, a resolution plan will be established.

Until now, VP's efforts have been focused on avoiding ending up in a situation where recovery was needed. Thus, an actual recovery plan has not been in place. This is ensured by mitigating the negative impact of wrongful professional behavior or wrongful book-entry in the VP system, partly via rules on the limitation of VP's liability stated in the VP participation agreement, and partly via a regulatory framework in the Danish Securities Trading Act concerning the mitigation of VP's liability for wrongful book-entry.

VP has approximately DKK 100 million in equity and non-distributable reserves (DKK 40 million as share capital and DKK 60 million as various statutory reserves<sup>6</sup>). These reserves would enable VP to continue its operations for nine months, in the event of sudden market changes where VP has no or little income. VP's capital capability is pursuant to Section 82 of the Danish Securities Trading Act.

Furthermore, VP holds a guarantee in which all participants are obliged to participate. Pursuant to Section 2 of the 'Rules on the capital capability of VP SECURITIES Services', the size of the guarantee submitted under the security provided by the individual account controller is valid for one year at a time for the period from 1 April to 31 March, cf., however, Section 2(6). The guarantee is calculated on the basis of the

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<sup>6</sup> - VP's annual report 2013, page 34.

account controller's total use of basic services in the calendar year preceding the aforementioned period, seen in relation to VP's total sale of basic services in the same calendar year, although as a minimum of EUR 100,000. If an account controller has not been connected to VP for a full calendar year, the size of the guarantee is decided on the basis of the account controller's estimated full-year consumption of basic services. This estimate is made by VP's Board of Directors, with final effect.

After VP's Board of Directors has approved the accounts, VP will perform a recalculation of the guarantee commitment for one year from 1 April to 31 March, based on the total sale of basic services in the previous year. The recalculated figures will apply until a new calculation is made.

The amount can be seen from an accompanying guarantee certificate from VP SECURITIES A/S, which is forwarded in two copies – one of which has to be duly signed and returned to VP SECURITIES A/S.

With regard to recovery today, the rules are mainly defined in Danish company law (VP is structured as a limited liability company) and the Danish Securities Trading Act. In the event of VP's insolvency, the legal framework will appoint a liquidator of VP's assets. All securities accounts with VP will be outside this liquidation (since they are not assets in the VP recovery) and may be transferred to another CSD (or, more likely, taken over via the recovery of VP) as decided by the liquidator.

#### KEY CONSIDERATION 4

Assets held to cover general business risk should be of high quality and sufficiently liquid in order to allow the FMI to meet its current and projected operating expenses under a range of scenarios, including in adverse market conditions.

VP has DKK 100 million in equity and non-distributable reserves (DKK 40 million as share capital DKK 60 million as various statutory reserves<sup>7</sup>). VP solely holds highly liquid assets with a low duration. At any given time, VP is entitled to sell its invested assets without notice, with only a very limited loss of value. VP only invests in SIFI-acknowledged banks, to ensure high liquidity. Furthermore, the Board of Directors receives monthly financial reports.

#### KEY CONSIDERATION 5

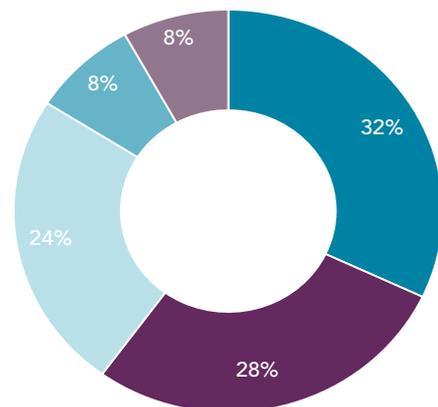
An FMI should maintain a viable plan for raising additional equity should its equity fall close to or below the amount needed. This plan should be approved by the Board of Directors and updated regularly.

VP does not have a formal approved plan for raising equity and is currently awaiting the finalisation of the relevant legal framework for such a plan. This legal framework is mainly defined in the CPSS-IOSCO cooperation and the planned European regulation on the resolution and recovery of FMIs.

VP is structured as a limited liability company subject to Danish company law and the Danish Securities Trading Act.

Additional equity requires decisions by VP's general assembly of shareholders. The current VP shareholders mainly reflect its users.

#### CHART 15: CURRENT VP SHAREHOLDERS



- Banks and stockbroking companies
- Bond issuing companies
- The National Bank of Denmark
- Share issuers
- Institutional investors

VP expects to propose its recovery and resolution plan to VP's Board of Directors as soon as the relevant legal framework has been finalised.

# PRINCIPLE 16

## CUSTODY AND INVESTMENT RISKS

An FMI should safeguard its own and its participants' assets and minimise the risk of loss on and delay in access to these assets. An FMI's investments should be in instruments with minimal credit, market and liquidity risks.

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### KEY CONSIDERATION 1

An FMI should hold its own and its participants' assets at supervised and regulated entities that have robust accounting practices, safekeeping procedures and internal controls that fully protect these assets.

Assets held with VP can be divided in three categories: A) investor assets held with a bank acting as account controller, B) participants (i.e. banks) own assets, and C) VP's own assets. VP offer a book-entry system designed for professional as well as retail market transactions (end-investor securities accounts). This design allows for ultimate segregation of securities on end-investor account level as well as omnibus accounts.

As regards VP's own assets (a very limited number of fixed income bonds, please see P15) is held on segregated accounts which is held by a bank acting as account controller for VP.

Asset protection is further ensured by the design of the VP system which ensures full audit trail and control of authorization of any credit or debit of accounts with VP (general ledger accounts as well as securities accounts).

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### KEY CONSIDERATION 2

An FMI should have prompt access to its assets and the assets provided by participants, when required.

With regard to the client assets held in safekeeping by VP, VP provides ultimate custody services (individual end-investor accounts which are legally held at VP, but maintained by the investor's custodian bank). Danish securities legislation ensures immediate access to these assets irrespective of the insolvency of the FMI or the custodian bank. VP does not have interests in or ownership rights to the assets held in its systems (no general lien or similar).

VP does not hold own assets with any custodian. With regard to the assets held on accounts with other CSDs (VP acting as investor CSD), the access to assets is regulated in the link agreement between VP and the other CSD.

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### KEY CONSIDERATION 3

An FMI should evaluate and understand its exposures to its custodian banks, taking into account the full scope of its relationships with each.

VP does not use services from any custodian bank.

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### KEY CONSIDERATION 4

An FMI's investment strategy should be consistent with its overall risk-management strategy and fully disclosed to its participants, and investments should be secured by, or be claims on, high-quality obligors. These investments should allow for rapid liquidation with little, if any, adverse price effect.

### INVESTMENT STRATEGY

VP does not hold a banking licence nor does it offer any cash or securities credit to its participants. VP therefore does not receive cash from its participants nor offer credit to its participants, and accordingly its investments are only relevant for its own funds. Due to the limited risk profile and capital requirements for VP, these funds are very limited.

VP's investment strategy is based on an Investment Instruction from the Board of Directors. The purpose of the Investment Instruction is to define the framework for investments of liquidity in bank deposits and securities with a satisfactory return based on a limited risk. VP's investments are limited to bank deposits in Danish SIFI banks with a maximum fixed period of six months, and Danish listed bonds issued in VP by Danish SIFI banks or Danmarks Nationalbank, with a modified duration of maximum 3.5 years.

### RISK CHARACTERISTICS OF INVESTMENTS

VP has a distribution policy to limit its maximum ratio of bonds to VP's total cash equity. Investments are spread over several bonds, to ensure a low risk.

VP does not offer any securities financing services or similar assessment services that involve investing participant assets.

VP's own assets are currently invested in fixed income instruments issued by VP (mortgage-credit bonds, government bonds, etc.). VP is entitled to sell these securities without notice.

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# PRINCIPLE 17

## OPERATIONAL RISK

An FMI should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures and controls. Systems should be designed to ensure a high degree of security and operational reliability and should have adequate, scalable capacity. Business continuity management should aim for timely recovery of operations and fulfilment of the FMI's obligations, including in the event of a wide-scale or major disruption.

### KEY CONSIDERATION 1

An FMI should establish a robust operational risk-management framework with appropriate systems, policies, procedures and controls to identify, monitor and manage operational risks.

On an ongoing basis, risk identification is part of the work performed by the first line of defence. Furthermore, VP's second line of defence gives advice to the first line of defence in relation to risk management.

Risk assessment workshops have been held throughout VP across all departments/functions, and a comprehensive risk register has been established. The risk register includes single points of failure, as well as the countermeasures in place. VP has evaluated these risks against its business and compliance goals, and the outcome was reported to the Board of Directors.

VP's business processes are supported by information systems to a very great extent.

Technical applications are subject to risk assessment using a tool from ISF which focuses on confidentiality, integrity and availability. These assessments take account of IT-related, as well as business-related, risks and exposures.

ISF provides its members with an updated publication – the Threat Horizon – covering threats that are expected to evolve in the immediate future, and this publication is used by VP as a source of inspiration. The Threat Horizon 2016 focuses on cyber threats and cyber security.

### MANAGEMENT OF OPERATIONAL RISK

VP's risk management is described in detail under Principle 3, including the three lines of defence and the risk operation model, which includes policies, procedures and controls.

### POLICIES, PROCEDURES AND CONTROLS

The following risk management standards have been taken into consideration:

- Sound Practices for the Management and Supervision of Operational Risk (BIS)
- COSO ERM
- Information Risk Assessment Methodology – IRAM (ISF)
- A Risk Management Standard (FERMA)

VP has clear internal policies related to the recruitment and development of employees, which are all listed in the Employee Handbook. The HR department holds responsibility for the processes and ensures that policies are in place and delegated. Staff turnover is addressed by rapid recruitment efforts and cover of tasks and responsibilities by colleagues. VP has a training academy whereby employees gain relevant professional qualifications and all employees have a development plan that is renewed each year in conjunction with performance appraisal interviews.

In connection with their contracts of employment, all employees have signed secrecy and insider declarations. All activities in VP's systems are logged, so that it is possible to detect any fraud in the event of suspected fraud.

Major projects are planned, staffed and managed in accordance with the system development procedures and guidelines (SDLC). Furthermore, comprehensive change management procedures are in place.

VP's SDLC (System Development Life Cycle) includes standard procedures to be followed, including project management, steering committees, and sound practices for systems development, documentation and testing. VP uses separate environments for program testing, systems testing, functional testing and production and has a standard procedure for staging between these environments.

The change management procedures ensure that all changes are registered in VP's change management system. Each change record is maintained throughout the development process, and new/updated programs, etc. must be approved by VP's Change Management Forum (CMF) before being implemented in production. The CMF is a cross-functional forum with the participation of various units within VP. Special attention is paid to "rush fixes".

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## KEY CONSIDERATION 2

An FMI's Board of Directors should clearly define the roles and responsibilities for addressing operational risk and should endorse the FMI's operational risk-management framework. Systems, operational policies, procedures and controls should be reviewed, audited and tested periodically and after significant changes.

## ROLES, RESPONSIBILITIES AND FRAMEWORK

VP's Risk operational model as well as Risk management policy, including the 3 lines of defense is included under P3. 1st line of defense holds the responsibility on a day to day basis. VP's Risk communication and reporting structure is covered under P3 as well.

Due to VP's extensive use of IT systems to support its business functions, special attention is paid to IT and information security. VP's IT department (IT Services) holds responsibility for implementing the necessary security processes and procedures, as well as a well-functioning disaster recovery plan. VP's Risk & Compliance holds responsibility for monitoring and ensuring that VP has the necessary disaster recovery and business resumption plans. The security policy is approved by the Board of Directors on an annual basis.

The Board of Directors performs annual review and approval of:

- The Risk Management Policy
- The Information Security Policy, including the overall business continuity goals
- The annual assessment of fraud mitigation
- The annual statement from VP's day-to-day management on the status of information security

In the event of specific or emerging risks, these risks are presented to the Board of Directors.

## REVIEW, AUDIT AND TESTING

VP's Risk & Compliance oversees the disaster recovery tests and holds the responsibility for reporting the test results to VP's day-to-day management. Furthermore, the function performs compliance checks to ensure that procedures and controls are in place.

VP has an internal systems audit function that plans and conducts audits on an ongoing basis. Furthermore, VP has

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an appointed external systems auditor, as well as a financial auditor. Findings and recommendations are reported to VP's management and are included in the audit books.

VP has designed controls that its participants are required to perform, as well as the necessary requirements concerning their internal/external auditors.

VP's risk framework is not subject to external auditing.

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## KEY CONSIDERATION 3

An FMI should have clearly defined operational reliability objectives and should have policies in place that are designed to achieve those objectives.

The objective is 99 per cent up-time. The Board of Directors requires VP to ensure secure and stable production and VP has implemented the necessary procedures to fulfil this requirement. On an ongoing basis, VP collects the necessary statistics (automated procedures) to measure the actual up-time.

Actual up-time is reported to the Board of Directors at each Board meeting.

The resilience that is built into VP's systems and automated procedures, and the automated collection and measurement of comprehensive statistics, are monitored closely, and proper escalation procedures are in place in the event of non-compliance.

The security policy (approved by the Board of Directors on an annual basis) defines the goals and principals which, in turn, have been implemented in e.g. the security framework. VP has implemented a comprehensive set of procedures, including system development, change management, problem management, operations planning, monitoring, reporting and disaster recovery plans.

VP's IT strategy focuses on security, secure and stable production, effective and flexible development and proper use of outsourcing.

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## KEY CONSIDERATION 4

An FMI should ensure that it has scalable capacity adequate to handle increasing stress volumes and to achieve its service-level objectives.

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Capacity monitoring is continuous (automated procedures), and capacity group capping is established. In rare cases, where the maximum capacity is fully utilised, production run-time might be extended. The ongoing monitoring includes warning signals to VP's IT operations staff, enabling rapid escalation when necessary, and VP's normal capacity can be extended at very short notice. VP has implemented close monitoring of its service providers.

VP's group capped capacity is shared between the system development, demo and production environments. VP has set up procedures enabling VP to change the distribution of capacity between these environments. In the event of an emergency, VP can scale down the capacity for development and demo environments and thereby give more capacity to the production environment.

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#### KEY CONSIDERATION 5

An FMI should have comprehensive physical and information security policies that address all potential vulnerabilities and threats.

#### PHYSICAL SECURITY

Security policy, security statements and operational procedures are in place, and the result of the annual risk assessment is part of the basis for updating these documents. The necessary surveillance and monitoring equipment is in place.

VP's premises are protected by alarms, the use of an electronic card system and access logging. Several areas have video camera surveillance.

VP's security framework includes the necessary requirements and measures to ensure adequate physical security.

VP's security framework is based on the Standard for good practice for information security, which is maintained by ISF (Information Security Forum). This standard includes physical security, as well as other relevant areas of security. As required by VP's security framework, VP has written procedures covering physical security, including the necessary controls.

#### INFORMATION SECURITY

VP's security policy and comprehensive security framework address all of these areas.

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#### KEY CONSIDERATION 6

An FMI should have a business continuity plan that addresses events posing a significant risk of disrupting operations, including events that could cause a wide-scale or major disruption. The plan should incorporate the use of a secondary site and should be designed to ensure that critical information technology (IT) systems can resume operations within two hours following disruptive events. The plan should be designed to enable the FMI to complete settlement by the end of the day of the disruption, even in extreme circumstances. The FMI should regularly test these arrangements.

#### OBJECTIVES OF THE BUSINESS CONTINUITY PLAN

VP has disaster recovery plans, as well as business resumption plans, in place. The disaster recovery plans are tested at least annually. The business continuity goals approved by the Board of Directors include the requirement that VP should be able to recover its critical systems from a disaster within a time frame of one hour. The responsibility to identify critical systems lies with the system owners. The set-up includes emergency procedures established between VP and Danmarks Nationalbank. Participation agreements include measures related to the handling of possible emergency situations that might require the re-entry of transactions. Service providers are required to ensure adequate resilience and disaster recovery plans and procedures, and this area is included in the annual declarations which VP receives from the service providers' independent auditors.

#### DESIGN OF BUSINESS CONTINUITY PLAN

Tests show that VP is able to resume operations within two hours. The use of mirrored disks ensures that data is not lost. The latest test showed that operation of VP's critical systems was resumed well within the one-hour requirement. Participants are required to be able to retransmit transactions for the last two business days.

These procedures are included and well-defined in the disaster recovery plans. The necessary escalation procedures are in place, allowing all members and the day-to-day management to invoke the disaster recovery plan when necessary. The disaster recovery plans are automatically pushed to the laptops of the relevant managers and staff members. VP's HR function holds the responsibility with regard to communicating information, including information in the event of a disaster.

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## SECONDARY SITE

VP's set-up is based on the use of mirrored systems. The secondary site is located at a sufficient distance from the primary site to cater for relevant scenarios. If the disaster recovery plan has to be invoked, VP will contact the service provider to execute a predefined command that will enable VP to immediately resume its production at the secondary site.

VP has considered the establishment of a third site. However, it has been decided not to establish this third site for the time being. Nonetheless, VP's use of a back-up tape system ensures that VP has tape back-ups at three different sites. In extreme situations where the primary as well as the secondary site is unavailable, resumption of production is possible from the tape back-ups – but in such circumstances, resumption within one hour cannot be achieved.

## REVIEW AND TESTING

The tests of contingency plans include such scenarios. Tests are performed at least twice a year, with different scenarios. During the tests, it is tested that connection to Danmarks Nationalbank and one of the participants is available. Furthermore, users log in remotely to the systems. VP's service provider participates in the testing of disaster recovery for the platform holding the legacy systems.

At the latest test, two participants were included.

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## KEY CONSIDERATION 7

An FMI should identify, monitor and manage the risks that key participants, other FMIs, and service and utility providers might pose to its operations. In addition, an FMI should identify, monitor and manage the risks its operations might pose to other FMIs.

## RISKS TO THE FMI'S OWN OPERATIONS

The resilience of VP's systems ensures that its operations are not affected by its participants, etc. (CCPs are handled like any other participant.) VP has set up a separate platform enabling the performance of a variety of stress tests, where key participants are extracted from the production runs, thereby enabling analysis of the results.

VP has a housing agreement with an external service provider regarding the mainframe and systems software. The contract and the service level agreement clearly define the necessary requirements. The service provider is required to

comply with VP's security policy and procedures, and the roles and responsibilities have been clearly defined. As this is a housing agreement, all functions and procedures related to the development, maintenance and operation of VP's systems, including change management, problem management, operations planning, operation and monitoring of VP's systems, data and database administration, security administration, safety copying, etc., are performed by VP.

The housing agreement includes a clear reporting structure between VP and the service provider, and allows the relevant authorities to have access to the premises of the service provider. Any use of subcontracting must be approved by VP.

## RISKS POSED TO OTHER FMIS

In order to establish a link, VP requires the linked partner to be subject to its home country's FSA. In addition, VP obtains the Danish FSA's authentication for all of its links, and legal opinions concerning links where VP is connected as investor CSD.

VP's links with other CSD's follow ESCDA's standards for links. The links are generally both DvP and FoP and the links are structured identically, with only minor differences. Risks associated with the links can be divided into three categories: legal, operational and financial.

## LEGAL RISKS

Common to all links is that legal risks are identified and addressed via the link agreement between the link partner and VP.

In the case of securities issued in Denmark (VP as the issuer CSD), all issues are held at VP on behalf of the investor CSD's customers. Since the securities are not deposited with another CSD, there are no special risks regarding the storage of issued securities. Likewise, settlement also takes place at VP (as issuer CSD). Therefore both the deposit and settlement of securities follow Danish law, eliminating any legal risk associated with links whereby VP acts as the issuer CSD. Legal opinions are obtained prior to the establishment of links where VP acts as investor CSD, in order to identify any legal risks that VP might be exposed to with regard to the depositing and settlement of securities.

## OPERATIONAL RISKS

Operational risks are minimised via the service level agreement approved by the link partner and VP prior to the establishment of the link.

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The main operational risks identified are cross-border trades that are not settled on time, due to communication problems. With each of its link partners VP has agreed on contingency procedures to work around communication problems which are included in the service level agreements.

#### **FINANCIAL RISKS**

VP does not offer or borrow credit from link partners, thereby eliminating any credit or liquidity exposure associated with links to other CSDs.

VP does not coordinate its business continuity arrangements with other FMIs.

#### **COMMENT FROM THE OVERSEERS**

In the process of identifying and assessing risks related to interdependencies, it is recommended that VP should consider cooperation with relevant entities to establish sector-wide tests of scenarios that pose a risk across the financial infrastructure. Part of this recommendation involves identifying entities that are considered to be systemically important for settlement in Denmark.

#### **VP RESPONSE TO COMMENT FROM OVERSEER**

Please refer to VP's answer to the recommendation from the overseer under Principle 3.

Further more VP will, in close cooperation with relevant authorities, seek to establish a more formal sector-wide cooperation aimed at identifying and address systemic sector-wide risks.



# PRINCIPLE 18

## ACCESS AND PARTICIPATION REQUIREMENTS

An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.

### KEY CONSIDERATION 1

An FMI should allow for fair and open access to its services, including by direct and, where relevant, indirect participants and other FMIs, based on reasonable risk-related participation requirements.

VP's access rules differ, depending on the nature of the service. VP currently offers three CSD core services: issuance, clearing and settlement, and safekeeping.

### ISSUANCE

Access to issuance at VP is available to any corporate financial or public company, irrespective of its geographical incorporation. VP has direct contractual agreements with all of its issuers. Any interaction between the issuer and VP is maintained via a financial intermediary (issuing agent).

In accordance with Section 4 of the Danish Securities Trading Act, access to act as issuing agent is open to any EU/EEA financial or corporate entity.

### CLEARING AND SETTLEMENT

In accordance with Section 54(2) of the Danish Securities Trading Act, clearing and settlement are open to any EU/EEA bank or broker. In addition, cf. Section 54(2) and (3) of the Danish Securities Trading Act, the following entities may participate in the clearing operations on their own behalf:

- a. Market participants from the EU or from countries with which the EU has concluded an agreement within the financial area, provided that the entity in question is authorised by its home country to conduct investment services activities.
- b. Market participants that conduct investment services activities from countries outside the EU, or countries with which the EU has concluded an agreement within the financial area, always provided that the entity in question is subject to public supervision.
- c. Foreign clearing centres (= CSDs and CCPs established outside Denmark) from EU countries, or countries with which the EU has concluded a cooperation agreement, which have not been refused authorisation by the Danish Financial Supervisory Authority to conduct activities in

the Danish market, or foreign clearing centres for other countries which hold the Danish FSA's authorisation to conduct activities in the Danish market.

### SAFEKEEPING

Safekeeping of securities in a CSD is regulated by Section 62<sup>8</sup> of the Danish Securities Trading Act, which allows a number of financial intermediaries to have access to use the CSD:

- Financial undertakings licensed as banks or investment companies;
- Financial undertakings licensed as mortgage-credit institutions or investment management companies, to the extent that such undertakings are licensed under Section 9(1) of the Financial Business Act;
- Undertakings which are jointly managed by these financial undertakings for the purpose of managing securities;
- Danmarks Nationalbank and central banks in other EU countries, or in a country with which the EU has entered into an agreement for the financial area;
- The Agency for Governmental Management;
- Clearing centres; and
- Bond-issuing institutions;
- Investment firms and credit institutions which have been granted a licence in another EU country or in a country with which the EU has entered into an agreement for the financial area.

All access to VP's core services (issuance, clearing and settlement, and safekeeping) is subject to rules in CSD regulations and international standards for securities settlement services (CPMI-IOSCO). They have been continuously assessed by regulators and overseers to be compliant with these rules. In the event of refusal of access to VP, a participant is entitled to file a complaint to VP. VP has so far never received any such complaints concerning refusal of access to VP's services.

### KEY CONSIDERATION 2

An FMI's participation requirements should be justified in terms of the safety and efficiency of the FMI and the markets it serves, be tailored to and be commensurate with the FMI's specific risks, and be publicly disclosed. Subject to maintaining acceptable risk control standards, an FMI should endeavour to set requirements that have the least-possible restrictive impact on access, as circumstances permit.

8 - English version of the Danish Securities Trading Act: [https://www.finanstilsynet.dk/upload/Finanstilsynet/Mediafiles/newdoc/Acts/CAct214\\_020408\\_new.pdf](https://www.finanstilsynet.dk/upload/Finanstilsynet/Mediafiles/newdoc/Acts/CAct214_020408_new.pdf)

## JUSTIFICATION AND RATIONALE OF PARTICIPATION CRITERIA

VP's participation requirements are justified in terms of safety and efficiency, see the list below:

1. Access to clearing and settlement services is limited to financial sector professionals, which is justified in terms of safety.
2. Access to issuance is not limited to specific companies (VP issuance is available to financial-sector issuers, public-sector issuers, and corporate issuers), or to specific geographical locations (issuers from any country with an ISO country code may issue at VP). VP requires interaction with the issuer via an issuing agent, which will ensure that the terms of issuance fulfil technical as well as compliance (KYC/AML) requirements. The requirements for issuers to act via an issuing agent domiciled in the EU/EEA are justified in terms of safety and efficiency.
3. Access to safekeeping services is limited to Section 62 of the Danish Securities Trading Act (see above under key consideration 1). Safekeeping services are regulated in the Danish Securities Trading Act and are subject to strict liability for the securities account controller. Accordingly, the access to offer services as a securities account controller is limited to financial-sector professionals. This requirement is justified in terms of safety and efficiency.

As laid down by the Danish Securities Trading Act, VP is liable for book-entry errors, etc., on an objective liability basis. This liability is covered by a guaranteed capital resource from the custodian institutions in VP, up to a total of EUR 150 million. EUR 100,000 is the minimum guarantee, although the guaranteed capital resources can increase, depending on the custodian's percentage of overall business with VP, compared to the total for all custodians – this is evaluated on an annual basis.

The member contributions to the fund by VP's members are reassessed annually.

VP's rules and regulations concerning access and participation requirements are reviewed and updated on a regular basis to reflect market demand and new regulation, and since the start of operation in 1983 have been assessed in full accordance with all relevant international standards. All rules concerning access to VP's services are publicly available on VP's website<sup>9</sup>.

## KEY CONSIDERATION 3

An FMI should monitor compliance with its participation requirements on an ongoing basis and have clearly defined and publicly disclosed procedures for facilitating the suspension and orderly exit of a participant that breaches, or no longer meets, the participation requirements.

VP regularly receives information from relevant resources (such as the Danish FSA) with regard to the withdrawal of licences of banks which may potentially act as participants in VP. In the event of information that a VP client no longer fulfils the VP access criteria, VP will act according to the rules and procedures for participant default.

With regard to VP's core-services, these are available to any clients for as long as the access requirements are fulfilled. In its current access rules, VP does not differentiate between the rating of its participants, but solely as participants with financial licences and participants without. Accordingly, any deterioration in the risk profile of a VP participant is not a direct concern of VP, unless the participant's licence is withdrawn by the relevant FSA. For a limited scope of services, VP itself may also act as issuing agent or account controller for the clients. With regard to such clients, VP will apply an updated participant risk profile, according to applicable rules, e.g. for customer identification and the VP access requirements.

A detailed description of VP's procedures in the event of the default of a clearing member is publicly available on VP's website<sup>10</sup>.

9 - <https://www.vp.dk/en/About-VP/Legal-framework/Participation>

10 - <https://www.vp.dk/en/About-VP/Legal-framework/Insolvency>

# PRINCIPLE 19

## TIERED PARTICIPATION ARRANGEMENTS

An FMI should identify, monitor and manage the material risks to the FMI arising from tiered participation arrangements.

### KEY CONSIDERATION 1

FMI should ensure that its rules, procedures and agreements allow it to gather basic information about indirect participation in order to identify, monitor and manage any material risks to the FMI arising from such tiered participation arrangements.

### TIERED PARTICIPATION ARRANGEMENTS

Due to the design and level of dematerialisation in the capital market, most securities transactions are settled with VP. This concerns professional and retail market transactions. Securities normally settle at end-investor level (ultimate asset segregation) and currently no banks offer internal settlement of securities in the Danish market. Accordingly, the total exposure on tiered-participation in the Danish market is low. As a rule, all settlement with VP currently settles in central-bank money. The only exception is settlement of single-priced investment funds. For currencies other than DKK, please see our answer to principle 9 concerning cash-settlement assets.

VP offers participation on the cash and securities sides, which allows for settlement via another intermediary. Securities are normally held directly by participants on individually segregated accounts with VP. Securities may be held and settled via omnibus accounts. VP does not have information on the underlying clients of the holder of the omnibus account. Cash is normally settled via approximately 30 settlement banks with cash settlement accounts at Danmarks Nationalbank. Participants who do not have cash settlement accounts themselves with Danmarks Nationalbank need to enter into an arrangement with a cash settlement account intermediary ("primary cash provider"). Accordingly, there might be exposure of the direct participant (primary cash provider or the omnibus account holder) vis-à-vis its clients acting as indirect participants (tiered participation) in the VP settlement system.

Many banks in the Danish market offer sub-custody services to banks and brokers domiciled outside Denmark. These banks and brokers normally do not have cash accounts with Danmarks Nationalbank themselves, and therefore have contracts with their sub-custodians for access to securities financing services. The bank and broker will normally have

one or more securities accounts managed by the sub-custodian.

VP offers a number of securities financing techniques to the primary cash provider, which inter alia allows them to manage their net cash liquidity exposure to their clients. This information is gathered from the VP customer static data system, which holds information on indirect participation on the cash side. This information explains which securities accounts belonging to an indirect participant are attached to the cash account belonging to a direct participant in the VP settlement system. VP does not have information on the underlying clients of holders of omnibus securities accounts.

The VP system allows for the identification of indirect participants' net cash position in settlements. This information is collected on a regularly basis and analysed and reported to the relevant authorities in connection to the regularly performed stress testing. Due to the concentration in the Danish market, the number of participants that allow for indirect participants, and their exposure to indirect participants, is very stable and well-known to VP. Compared to similar countries, the Danish market is less concentrated on indirect participants, which may reflect the easy access to cash settlement accounts for participants with Danmarks Nationalbank.

### RISKS TO THE FMI

VP evaluates its own and its participants' exposure via regular stress testing. Stress tests are normally conducted on a semi-annual basis, and may cover exposure via indirect participation, as well as other relevant risk scenarios. The findings of the stress tests are reported to the Board of Directors, overseers and regulators at regular meetings, where the findings are discussed. Depending on the outcome of the stress testing scenario, VP's procedures or risk mitigation measures may be adapted accordingly. Due to the confidential nature of the data and the high concentration of the five largest participants' market volumes in settlement, VP does not communicate its findings from the stress testing, except to the Board of Directors of VP and the relevant authorities.

Concentration on indirect participants in the Danish market is relatively stable (not much transfer of indirect participants between their direct participants) and indirect participants on the cash side are known to VP (available static data in the

VP system). So far, the risk of indirect participants on the cash side is quite limited and is not identified as a risk in VP settlement.

VP is not itself exposed to liquidity or credit risk stemming from tiered participation. Tiered participation is mainly a risk exposure for the participants involved (bilateral credit risk exposure and liquidity risk exposure), and a settlement risk for the VP settlement as such.

The overall conclusion of the stress tests conducted so far is that the risk from tiered participation is low, partly due to the lack of exposure to settlement banks (VP only settles in central-bank money) and partly due to the availability of sufficient cash liquidity with banks acting as direct participants (primary cash providers), mainly due to the VP auto-collateral facility.

VP offers its direct participants access to risk mitigation tools, to allow them to control its exposure to their clients. On an ongoing basis, VP monitors the total cash position of its direct participants, and the possible individual maximum liquidity limit imposed by the direct participants vis-à-vis their individual clients.

Even though the risk is identified as being very small, VP analyses this risk on a regular basis in conjunction with the frequent stress testing.

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#### KEY CONSIDERATION 2

An FMI should identify material dependencies between direct and indirect participants that might affect the FMI.

VP maintains a list of indirect participants with each of its largest participants. This list allows VP to identify from its participant static data the dependencies between direct and indirect participants. These dependencies will not influence VP, as VP is not itself exposed to credit or liquidity risk. VP monitors indirect participants on an ongoing basis to assess risks that they might impose on the settlement in VP. This includes semi-annual stress testing.

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#### KEY CONSIDERATION 3

An FMI should identify indirect participants responsible for a significant proportion of transactions processed by the FMI and indirect participants whose transaction volumes or

values are large relative to the capacity of the direct participants through which they access the FMI, in order to manage the risks arising from these transactions.

VP's stress testing encompasses several scenarios, including scenarios with tiered participation. To date, the stress testing has not identified risks or a need to adjust the procedures. Due to the high concentration of cash clearing of securities settlement in the Danish market, all direct participants that have significant numbers of indirect participants will be subject to individual stress-test assessments.

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#### KEY CONSIDERATION 4

An FMI should regularly review the risks arising from tiered participation arrangements and should take mitigating action when appropriate.

VP conducts semi-annual stress testing of individual direct participants with regard to their clients' exposure. VP's policies and procedures for risk mitigation are updated continuously in order to reflect the findings of the stress tests.

VP mainly monitors liquidity risk in its stress testing. So far, no additional mitigation has been identified as necessary, but in the event of inadequate liquidity exposure, VP may consider asking for minimum cash liquidity buffers.

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# PRINCIPLE 20

## FMI LINKS

An FMI that establishes a link with one or more FMIs should identify, monitor and manage link-related risks.

### KEY CONSIDERATION 1

Before entering into a link arrangement and on an ongoing basis once the link is established, an FMI should identify, monitor and manage all potential sources of risk arising from the link arrangement. Link arrangements should be designed such that each FMI is able to observe the other principles in this report.

VP has links with three types of FMIs: central banks, CCPs and CSDs.

Common for all links is that legal risk is identified and handled within the agreement entered into by VP and the linked party. Likewise, operational risk is mitigated by the service level agreements entered into by the parties. For FMIs outside EU/EEA, VP requires a legal opinion stating that the FMI acknowledges the legal basis under which VP operates. Contracts and service level agreements are reviewed annually.

### LINK WITH CENTRAL BANK

With regard to the link established between the central bank and VP, a contract is entered into and agreed on by both parties for intraday credit in DKK (the Kronos system) and EUR (Target2), in order to handle risk management on an ongoing basis.

### LINKS WITH CCPs AND CSDs

VP neither offers nor lends credit from linked CCPs or CSDs, which eliminates credit and liquidity exposure arising from such links. Normally, a legal opinion is obtained prior to the establishment of a link whereby VP acts as client. Furthermore, the use of account segregation minimises the risk related to the default of a linked party.

**TABLE 4: LINK CONNECTIONS WITH OTHER CSDs**

INVESTOR CSD	ISSUER CSD	TYPE
VP (DK)	VP LUX	T2S link
VP (DK)	VP LUX	Link
VP (DK)	Clearstream/CBF (DE)	T2S Link
VP (DK)	Clearstream/CBF (DE)	Link
Clearstream/CBF (DE)	VP (DK)	T2S Link
Clearstream/CBF (DE)	VP (DK)	Link
Monte Titoli (IT)	VP LUX	T2S Link
SIS SIX (CH)	VP (DK)	Link
Clearstream (LUX)	VP LUX	T2S Link
Clearstream/CBF (DE)	VP LUX	T2S Link
Clearstream/CBF (DE)	VP LUX	T2S Link
Euroclear Bank (BE)	VP (DK)	Link
VP (DK)	Euroclear Sweden	Link
Euroclear Sweden	VP (DK)	Link
VP (DK)	Iceland CSD	Link
Iceland CSD	VP (DK)	Link

### KEY CONSIDERATION 2

A link should have a well-founded legal basis, in all relevant jurisdictions, which supports its design and provides adequate protection to the FMIs involved in the link.

VP currently operate links to the following (I)CSDs:

- Euroclear Bank (investor SSS)
- Clearstream Banking AG (investor SSS)
- SIS SIX (investor SSS)
- Euroclear Sweden (no activity and no relevance for Eurosystem credit operations)
- VBSI (very limited activity and no relevance for Eurosystem credit operations)
- VP LUX (issuer SSS)

VP has no links to CCPs, trading platforms, depository banks or other infrastructure providers.

The link agreements are based on a standard contract framework applicable to all investor (I)CSDs that are participants in VP. As a rule, the terms of the contracts are identical to those for other participants in VP, except for individually

negotiated terms and conditions for any local custody services provided by VP. All securities eligible for book entry at VP are also eligible for book entry under the link agreements. With regard to the custody risk, like all other VP participants, all investor SSSs are subject to risk mitigation provisions in the event of errors which entitle and oblige both parties to engage in extended repair services and which limit their access to economic compensation. Liability due to custody risk is mitigated by VP by, inter alia, a standard Professional Liability and Crime Insurance contract with a limit of EUR 25 million, with the insurance company ACE Europe, and which is also applicable to its link participants. As a rule, all holdings in links are reconciled daily.

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### KEY CONSIDERATION 3

Linked CSDs should measure, monitor and manage the credit and liquidity risks arising from each other. Any credit extension between CSDs should be fully covered with high-quality collateral and be subject to limits.

VP does not provide credit to any links. VP has no exposure to credit or liquidity risk arising from links.

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### KEY CONSIDERATION 4

Provisional transfers of securities between linked CSDs should be prohibited or, as a minimum, the re-transfer of provisionally transferred securities should be prohibited prior to the transfer becoming final.

VP does not perform provisional transfers or contractual settlements.

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### KEY CONSIDERATION 5

An investor CSD should only establish a link with an issuer CSD if the arrangement provides a high level of protection of the rights of the investor CSD's participants.

VP's links to other CSDs are generally structured according to the same model, but with minor differences between links. VP's links follow the ECSDA standard agreement for issuer-CSD links.

A link involves an issuer CSD and an investor CSD. With regard to the securities issued in Denmark, VP is the issuer CSD, while e.g. Euroclear Bank is the investor CSD. Euroclear Bank has an omnibus account at VP on which its clients'

securities are held. All VP issues thus remain in VP. Since they are not held in other CSDs, there are no special risks associated with links when it comes to safeguarding the integrity of the issues (for further information on the legal framework for book entry of securities at VP, see our response to principle 1).

As settlement also takes place in the issuer CSD, it is subject to the legislation of the issuer CSD's home country. This helps to manage the legal risks associated with links. It also ensures that there is no uncertainty concerning settlement finality, because the CSDs' accounts at VP are subject to the same rules as those of other participants.

VP stipulates as a condition for the conclusion of link agreements that the link partners must be subject to financial supervision. Furthermore, VP's internal auditors review VP's links.

# PRINCIPLE 21

## EFFICIENCY AND EFFECTIVENESS

An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.

### KEY CONSIDERATION 1

An FMI should be designed to meet the needs of its participants and the markets it serves, in particular with regard to choice of clearing and settlement arrangement; operating structure; scope of products cleared, settled, or recorded; and use of technology and procedures.

VP regularly reviews its costs and prices. The Board of Directors receives quarterly reports on VP's turnover, costs and earnings, and VP regularly adjusts its prices to reflect changes in the market.

VP compares its prices with those of other CSDs, although direct comparisons are impeded by the fact that not all CSDs have prices that reflect the costs of producing their services. As a rule, prices for VP's core services reflect the production costs, which contributes to efficient resource allocation.

VP continuously discusses its service level in dialogue with the Board of Directors, individual customers or the customers jointly. The service level is e.g. discussed as part of the quarterly reporting to the Board of Directors. In addition, VP holds regular meetings with customers in its customer forum to discuss various issues, such as the need for new services. With regard to operational efficiency, VP continuously monitors the operational capacity of its systems. VP prepares monthly reports on operational reliability. Since the start-up of operations in 1983, the VP system has been available for services during 99.9-100 per cent (annual average) of its planned opening hours. In the event of capacity restraints, VP has a business procedure for adjusting the capacity which can be implemented within a few minutes.

The members of VP's Board of Directors are financial market professionals (banks, CEOs, etc.) and thereby users of VP as a CSD. VP ensures efficient and effective systems partly via this user-governance structure and partly via dialogue with the market users (VP's clients).

This is reflected in the ongoing dialogue with participants (the quarterly meetings of the VP User Committee and various ad hoc fora) and regular customer satisfaction surveys. The findings of these surveys are described in VP's publicly available Annual Reports.

### KEY CONSIDERATION 2

An FMI should have clearly defined goals and objectives that are measurable and achievable, such as in the areas of minimum service levels, risk-management expectations and business priorities.

VP's opening hours, prices and services are publicly available on VP's website. Statistics and ratios are updated on the website on an ongoing basis.

The objectives of VP are defined in its Articles of Association as:

- To operate a registration business in accordance with the Danish Securities Trading Act, to operate a securities clearing business in accordance with the Danish Securities Trading Act and to operate non-core activities in accordance with the decisions of the Board of Directors and the applicable legislation.

This objective is met with regard to the registration services (issuance and safekeeping of dematerialised securities) as VP SECURITIES is currently the only provider in Denmark. VP SECURITIES does not hold a legal monopoly on registration services, which is therefore a competitive service that is also available to other CSDs.

This objective is also met with regard to the clearing and settlement services (securities clearing business), as this service is provided to Danish banks not only by VP SECURITIES, but also by a number of other CSDs (investor CSDs) operating in the Danish market for settlement of securities via a link agreement with VP. This service is offered in a competitive market and settlement prices are publicly available on each CSD's website.

The objective is also met with regard to the non-core activities (ancillary services), such as shareholder registrar, asset management, proxy voting services and trustee services, which are all offered in competitive markets (no legal or natural monopoly applies).

- To work to ensure that the design and functionality of the company's system and the company's product line are consistently future-oriented and comply with international standards. Furthermore, the company shall work to support broad participation in the Danish securities market, including a broad share culture, through reasonable terms for the registration of securities.

This objective is met via the VP governance model (see our answer to principle 2: Governance), VP's prices, which are publicly available on our website, and our regular user dialogue (dedicated user committees and various ad hoc user groups, for instance T2S).

- VP is part of the infrastructure that supports the issuers of bonds via its handling of the ongoing issuance and drawing of bonds and payments thereof to the individual custody depositories. This service is provided to the issuers of bonds at a price which is determined according to the actual costs of the service. The price may not be determined on the basis that the service is essential for the issuers of bonds and is not provided by any other company.

This objective reflects specific obligations for VP vis-à-vis its issuers to maintain an efficient infrastructure for issuance, clearing and settlement of bonds. VP does not charge issuers for more than our actual costs of issuance, and the general trend in the market is a decline in prices for issuing securities. The VP price was reduced in 2007 and again on 1 April 2010. Prices for issuers are currently regulated by law with regard to a specific provision that obliges issuers to pay their investors the cost of safekeeping equity securities at VP. This specific price regulation is currently under consideration as part of the implementation of the CSDR.

VP has defined goals for its uptime and for its settlement efficiency. These are measured on an ongoing basis and are published in VP's Annual Reports. For the year 2013, VP had a settlement success rate of 99 per cent for bonds and 97 per cent for shares<sup>11</sup>.

Goals and objectives are defined and adjusted on an ongoing basis by the Board of Directors. Assessment against relevant goals is performed at the quarterly meetings of the Board of Directors.

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### KEY CONSIDERATION 3

An FMI should have established mechanisms for the regular review of its efficiency and effectiveness.

VP compares its prices with those of other CSDs, although direct comparisons are impeded by the fact that not all CSDs have prices which reflect the costs of producing their services.

As a rule, prices for VPs core services reflect the production costs, which contributes to efficient resource allocation. VP evaluates its prices on an ongoing basis, and the positive bottom line, as well as costs, on a monthly basis.



# PRINCIPLE 22

## COMMUNICATION PROCEDURES AND STANDARDS

An FMI should use, or as a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement and recording.

contains a long-term element on migration from the proprietary format to SWIFT formats<sup>12</sup>.

### KEY CONSIDERATION 1

An FMI should use, or as a minimum accommodate, internationally accepted communication procedures and standards.

### COMMUNICATION PROCEDURES

The VP system is able to communicate using a number of international communication standards and procedures. The standards applied include the ISO 20022 messaging format, which is the international communication standard for securities trading; ISO 6166 concerning identification of securities (ISIN) and counterparties (BIC); and the ISO 10962 format for classification of financial instruments (CFI).

Guidelines on VP's communication rules and the participants' use of SWIFT messages can be found on VP's website (requires user login).

VP uses technical communication procedures as set out by international standards via dedicated lines: messages in ISO format via an MQ connection (requires a data centre at the customers' site), or via the SWIFT network. Via MQ, customers can also communicate in proprietary format (expected to be outsourced within a few years).

VP uses the same communication procedures for cross-border as for domestic operations.

### COMMUNICATION STANDARDS

Straight-through processing (STP) has been fully implemented in VP's system on the basis of the international standards mentioned above. STP provides for e.g. efficient links to other CSDs, such as Euroclear, Clearstream and VP's own subsidiary, VP LUX. In addition, VP offers services to ensure the participants a higher degree of STP, e.g. vp.TRADE STP, which automates the reporting of trades executed on several trading platforms.

In practice, most of the communication between VP and VP's participants takes place via a proprietary format developed by VP. SWIFT messaging is primarily used by foreign participants (remote members). However, a few Danish customers have converted from VP's proprietary format to SWIFT, and more are on the way. Consequently, VP's SWIFT strategy



12 - VP's rules for using SWIFT messaging are laid down in guidelines at VP's website. More general information on international communication standards is available at the ISO websites, e.g. [www.iso20022.org](http://www.iso20022.org) for ISO 20022. With regards to the SWIFT, more information is available through VP's site under SWIFT mystandards on demand.

# PRINCIPLE 23

## DISCLOSURE OF RULES, KEY PROCEDURES AND MARKET DATA

An FMI should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks, fees and other material costs they incur by participating in the FMI. All relevant rules and key procedures should be publicly disclosed.

### KEY CONSIDERATION 1

An FMI should adopt clear and comprehensive rules and procedures that are fully disclosed to participants. Relevant rules and key procedures should also be publicly disclosed.

### RULES AND PROCEDURES

Rules and procedures are disclosed in VP's participation agreement, general terms and conditions, clearing rules, user guidelines and rules of communication (including MyStandards). The aforementioned documents and other documents are available on VP's website<sup>13</sup>.

VP corrects any lack of clarity in its procedures on an ongoing basis through dialogue with its clients. With regard to its rules, any lack of clarity is determined via user committees.

### DISCLOSURE

VP provides business conditions and descriptions of how to use each part of its facilities/services.

According to VP's terms and conditions, when a book entry or service from VP is delayed or subject to errors or defects, and it is shown that the error is attributable to VP, VP is entitled and obliged to effect delivery, or to rectify the error as soon as possible, to the extent that this is possible for VP. The client accepts that the client may not furthermore claim any compensation for either direct or indirect losses, including loss of interest, costs due to the error or defect, or compensation for any amounts that the client may have been obliged to pay to third parties, apart from VP's objective liability in accordance with current Danish legislation at any time. This limitation of liability does not include VP's deliberate or grossly negligent liable actions or omissions.

Furthermore, VP's business conditions and guidelines explain how to use each of VP's facilities. The descriptions also contain instructions for the correction of incorrect registrations. The audit unit ensures that there are adequate safety procedures, including procedures for system changes. These procedures are agreed with VP's clients in the relevant user committees.

VP discloses such information via its website. Furthermore, changes and references are available via the website<sup>14</sup>.

### KEY CONSIDERATION 2

An FMI should disclose clear descriptions of the system's design and operations, as well as the FMI's and participants' rights and obligations, so that participants can assess the risks they would incur by participating in the FMI.

Such information is provided as clear rules and user guides, which are separated into a business system, and a technical section. These documents are all available for clients with access to vp.ONLINE.

The rules concerning VP's discretion are included in the relevant rules and regulations governing each service (mainly the Participant Agreement), which are all publicly available on VP's website.

Rights, obligations and risk are regulated by law, which is implemented in VP's written agreements.

### COMMENT FROM THE OVERSEERS

Adequate disclosure of VP's business continuity plans is crucial in order for participants to have clear directions under extreme circumstances when the plans need to be activated. It is recommended that VP considers how to sufficiently disclose business continuity plans to its participants. This could be achieved by testing the plans with the participants.

### VP RESPONSE TO COMMENT FROM THE OVERSEER

VP's recovery plans will include participants, in order to ensure safe and sound execution of the plan, and both the recovery and the resolution plan will be subject to tests.

### KEY CONSIDERATION 3

An FMI should provide all necessary and appropriate documentation and training to facilitate participants' understanding of the FMI's rules and procedures and the risks they face from participating in the FMI.

Rules for system protection are included in the user guidelines, clearing rules and rules of communication which are accessible to all clients via the website.

According to the rules, the participant is responsible for the

13 - <https://www.vp.dk/en/About-VP/Legal-framework>

14 - <https://www.vp.dk/en/About-VP/Legal-framework>

individuals who participate in registration having the competences and education required to do so.

According to the rules, the participant is responsible that for the individuals who participate in registration possess the competences and education required to do so.

So far, there have been no disputes regarding book entry. It would be fair to assume that participants have the information and competences required to be part of VP's systems. VP would initiate a dialogue with the participant and discuss why the participant is behaving abnormally, so that VP can advise and educate the participant properly. If the abnormal behaviour continues, VP will be able to deprive the participant of its right to make book entries (so far this has not been the case – VP would probably go far to avoid depriving participants of such rights).

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#### KEY CONSIDERATION 4

An FMI should publicly disclose its fees at the level of the individual services it offers, as well as its policies on any available discounts. The FMI should provide clear descriptions of priced services for comparability purposes.

Fees, including descriptions of how they are calculated, are publicly available on the open part of the website<sup>15</sup>. VP's prices are divided into basic services and other services.

The basic services include linking up to VP, together with the issuance, depositing and clearing of securities. The prices for linking cover VP's costs for a customer's link and the financial sector's current investment in building up the infrastructure. The prices for issuance, depositing and clearing cover VP's costs for the necessary functions when securities are issued, as well as trading and reporting to the market participants and local authorities. Changes of fees are always published at least 3 months prior to implementation.

The table of fees and user guidelines together give a cohesive description of VP's prices.

All VP's internal costs (technology and communication) are embedded in the transaction price, except for transactions via SWIFT.

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#### KEY CONSIDERATION 5

An FMI should regularly complete and publicly disclose responses to the CPMI-IOSCO disclosure framework for financial market infrastructures. An FMI should also, as a minimum, disclose basic data on transaction volumes and values.

This version is VP's first CPMI-IOSCO disclosure framework. In 2012, VP and Danmarks Nationalbank created a similar disclosure framework based on CPMI-IOSCO's recommendations.

Quantitative information is presented in VP's Annual Reports and in a dedicated facts and figures service that is publicly available on VP website: <https://www.vp.dk/en/About-VP/Facts-and-figures>.

This facts and figures service includes monthly updated statistics on issuance, custody, clearing and settlement activity at VP. VP's Annual Reports and our responses to relevant regulatory and industry questionnaires (currently the AGC questionnaire, the CPMI-IOSCO assessment report and the ECSDA Disclosure Report) are all publicly available on VP website: <https://www.vp.dk/en/About-VP/International-affairs/Ratings>.



VP SECURITIES A/S  
Weidekampsgade 14  
DK-2300 Copenhagen S  
P +45 4358 8888  
W [vp.dk](http://vp.dk)  
E [vp@vp.dk](mailto:vp@vp.dk)

500 Krone