IOSCO Systemic Risk Identification

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Disclaimer

The views and opinions presented in this presentation are of the presenter only and do not necessarily reflect the views and opinions of IOSCO or its individual members.

Agenda

1. Introduction

2. Systemic Risk Identification System

3. Securities Markets Risk Outlook 2013-2014

4. Research Agenda

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Introduction

IOSCO New Mission and Goals:

Identify and seek to address systemic risks to the fair and efficient functioning of markets, especially through:

- *Building an independent research capacity* to identify risks to the fair and efficient functioning of markets and
- *Liaising with other international financial standard setters and other global bodies* having a mission complementary to that of IOSCO, applying the research capacity to inform and enhance such liaison

Introduction

New Principles:

Principle 6:

The Regulator should have or contribute to a process to *monitor, mitigate and manage systemic risk*, appropriate to its mandate.

Principle 7:

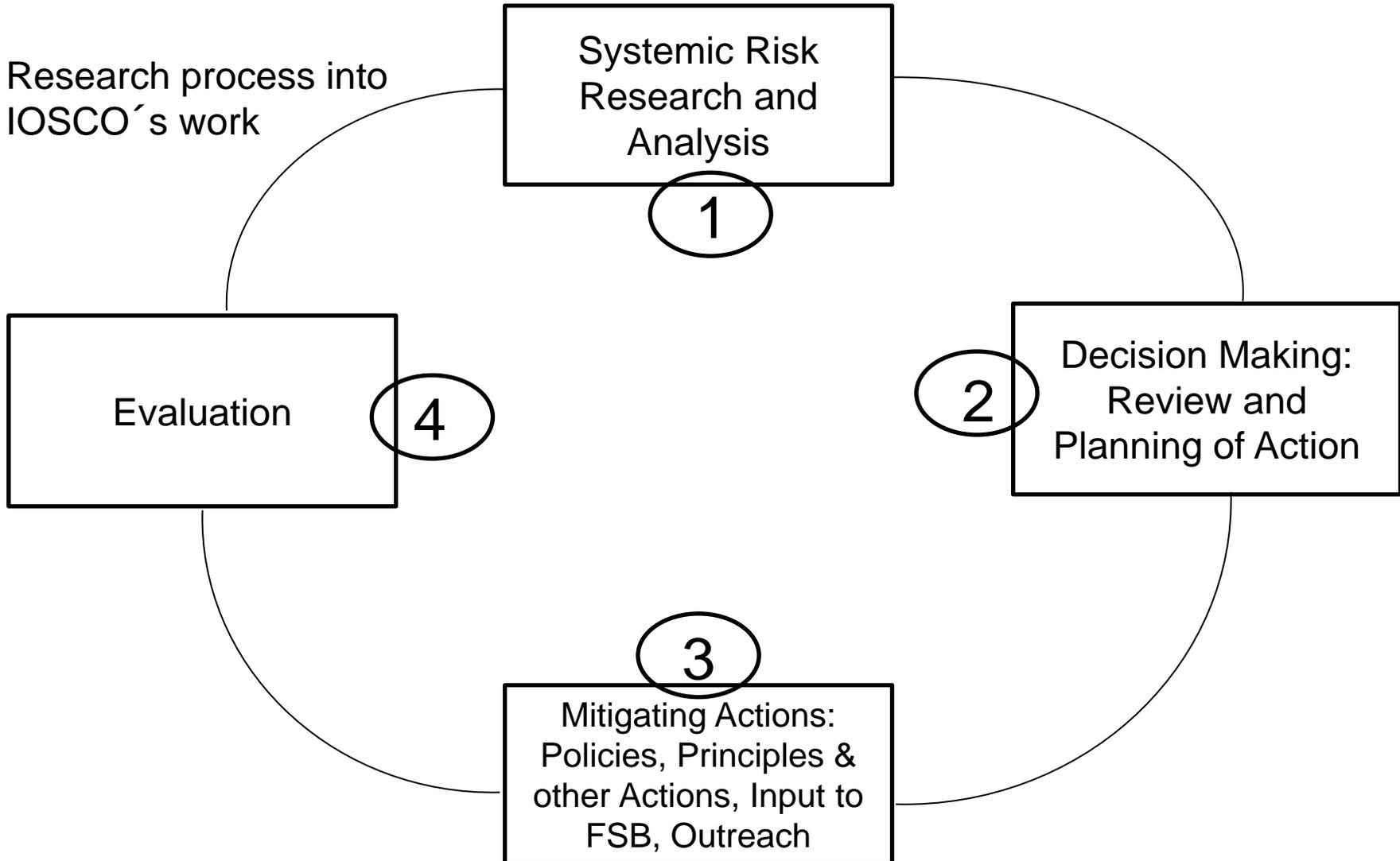The Regulator should have or contribute to a process *to review the perimeter of regulation* regularly.

Introduction

The Creation of the IOSCO Research Function:

a. Independent Research Department at the Secretariat

b. Committee on Emerging Risks
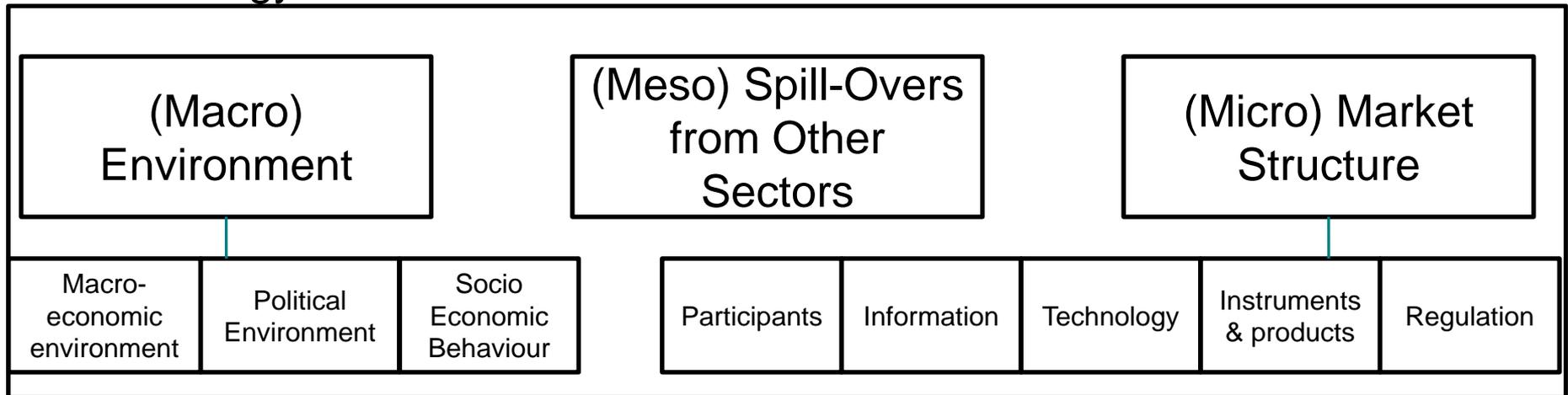
Introduction

Research process into
IOSCO´s work

Systemic Risk
Research and
Analysis

1

Decision Making:
Review and
Planning of Action

2

Evaluation

4

Mitigating Actions:
Policies, Principles &
other Actions, Input to
FSB, Outreach

3

Introduction

Methodology:

(Macro) Environment				(Meso) Spill-Overs from Other Sectors			(Micro) Market Structure		
Macro-economic environment	Political Environment	Socio Economic Behaviour		Participants	Information	Technology	Instruments & products	Regulation

Introduction

Current thinking on systemic risk:

- Systemic risk considered from an institutional perspective.

- Efforts to contain systemic risk through identifying, monitoring and regulating systemically important institutions.

- Institutional size is a key measure.

- Question of 'size' and 'the right size' is dominating discussion.

Introduction

Caveats:

- Institutional size not universally revealed as key determinant.

- Focus of studies mainly on banking sector.

- Correlation in samples not necessarily representative of correlation in the whole sector.

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Systemic Risk Identification System

Bijkerk, Tendulkar, Uddin and Worner, *Systemic Risk Identification in Securities Markets*, July 2012:

- A **practical** system for measuring and monitoring systemic risk in the securities markets.

- Includes two components:
  - Practical, coincidental, forward looking and dynamic list of indicators.
  - Data gathering.
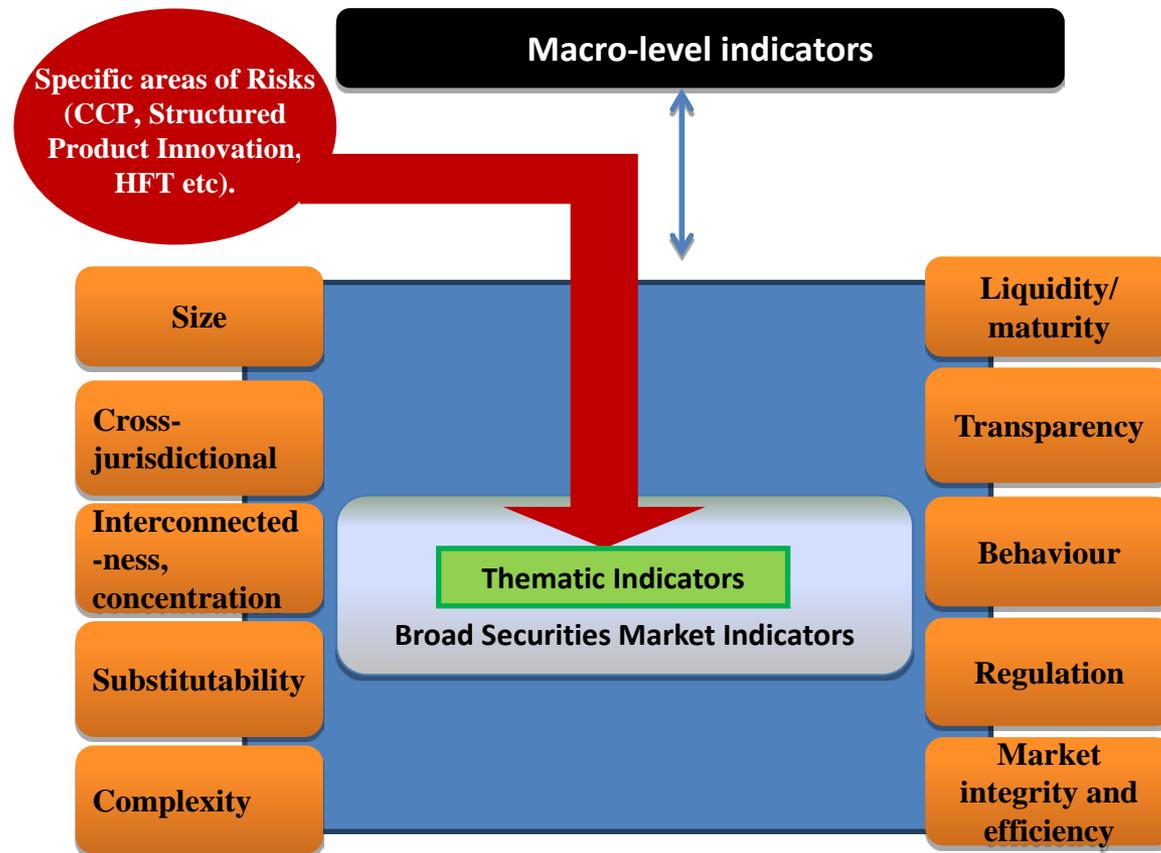
Systemic Risk Identification System

The concept:

- IOSCO's discussion paper on Systemic Risk

- IOSCO's Annual Securities Markets Risk Outlook

- IOSCO's ongoing work on indicators

The indicators:

- Synthesising indicators from BCBS on G-SIBS, IOSCO on Hedge Funds, the FSB on non-bank SIFIS and Capital Markets CRC Limited market integrity framework

Systemic Risk Identification System

Specific areas of Risks (CCP, Structured Product Innovation, HFT etc).

Macro-level indicators

Size

Cross-jurisdictional

Interconnected-ness, concentration

Substitutability

Complexity

Liquidity/ maturity

Transparency

Behaviour

Regulation

Market integrity and efficiency

Thematic Indicators

Broad Securities Market Indicators

Systemic Risk Identification System

	A	B	C
1	**Impact Factors**	**Consolidated Indicators for Securities Markets (broad and thematic)**	**Data Source**
2	**Size**	Broad absolute, relative and rate-of-growth size measures of sectors, markets, products, market participants and key gatekeepers and market activities. These measures can be used to discern the volume of financial services provided by a component of the financial system, the systemic importance of a particular entity in the market and the size of a market in comparison to other markets, the growth of complex product markets and historical trends to identify potential systemic risk. Leverage indicators are also important as a non-systemic activity can become systemic through leverage.	
3		Quantitative	
4		**Market-size indicators**	
5		Relative, absolute and rate of growth	
6		Value of turnover/number of transactions in each asset class	
7		HFT (share of turnover, share of order)	
8		**Main investor-base indicators**	
9		Top 5 largest investor classes (e.g. high-net worth, institutional)	
10		**Main funding-base/dependency indicators**	
11		Number of qualifying funds (e.g. for hedge fund)	
12		**Leverage and speed-of-money indicators**	
13		Total exposures (based on Basel III Leverage Ratio)	
14		Value of borrowings (unsecured borrowing, collateralized borrowing, synthetic borrowing) (e.g. for hedge funds)	
15		Securities lending (amount on loan, %)	
16		Margin-lending levels and haircuts	
17		Amount of unencumbered cash (e.g. for hedge funds)	
18		Degree of leverage on institution balance sheets	
19		Leverage levels of funds	
20		Household debt and leverage	
21		Trends in product leverage	
22		OTC derivatives notional value (e.g. for non-bank SIFIs)	
23		**Asset and flow-of-money indicators**	
24		Firm assets under management	

Systemic Risk Identification System

Example of Unit Linked Product in the Netherlands:
Measures and possible micro level indicators

IMPACT FACTOR	INDICATOR
Size	sales volume (€, number), and relative to other investment products
	growth year on year, and relative to other products
Interconnectedness/concentration	top 5 firms/percentage
Cross-jurisdictional	similarities with UK U/L products and scandal in 80s
	innovation through UK firms
Substitutability	collective investment schemes, individual life insurance product
Leverage	non-linear steepener in cases of high and low returns, and high insured capital

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Measures and possible micro level indicators

IMPACT FACTOR	INDICATOR
Complexity	product non-linearity
	administrative complexity
Transparency	lack of transparency on functioning of products and costs
Market integrity/Efficiency	products in general extremely inefficient
	no competition as products complex
Liquidity/maturity	clients locked-in for long period

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Measures and possible micro level indicators

| IMPACT FACTOR	INDICATOR
Incentives	clients: attracted by tax deductions, potential high returns
	intermediaries: attracted by enormous upfront sales fees
	firms: attracted by growing stable income stream
Behaviour	investors: greedy
	intermediaries: fee hunting combined with little knowledge and service
	firms: sales mood
Regulation	prudential product regulation: profit test to ensure firms solvency having perverse effects to efficiency of products
	conduct of business: very thin transparency regulation
	self regulation on transparency; no regulation of product, intermediary

Systemic Risk Identification System

Measures and possible macro level indicators

| Macro	indicator
macro financial	
(real) savings interest rate	savings rate declining, real savings rates around zero
disposable household income	steep growth of disposable income (GDP and tax cuts)
equity prices	era of the ´New Economy´ (year on year growth of stock prices)
macro institutional	
government	withdrawal from markets (e.g. state provision of pensions income)
	tax incentives changed (deduction for investment products as U/L)
	introduction competition banking and insurance sector
technology	computer technology enables spread of complex products
socio-economic trend	individualism

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Systemic Risk Identification System
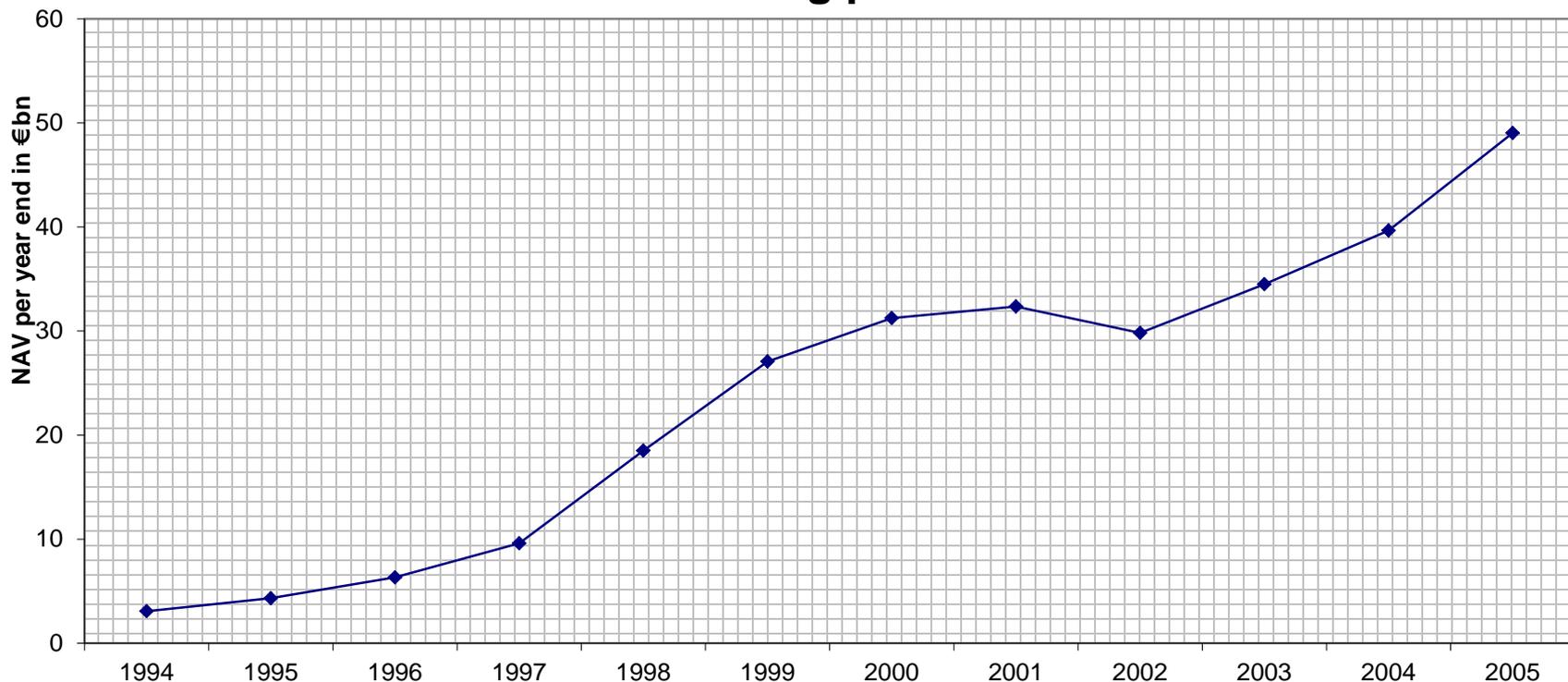
Size indicator: new products
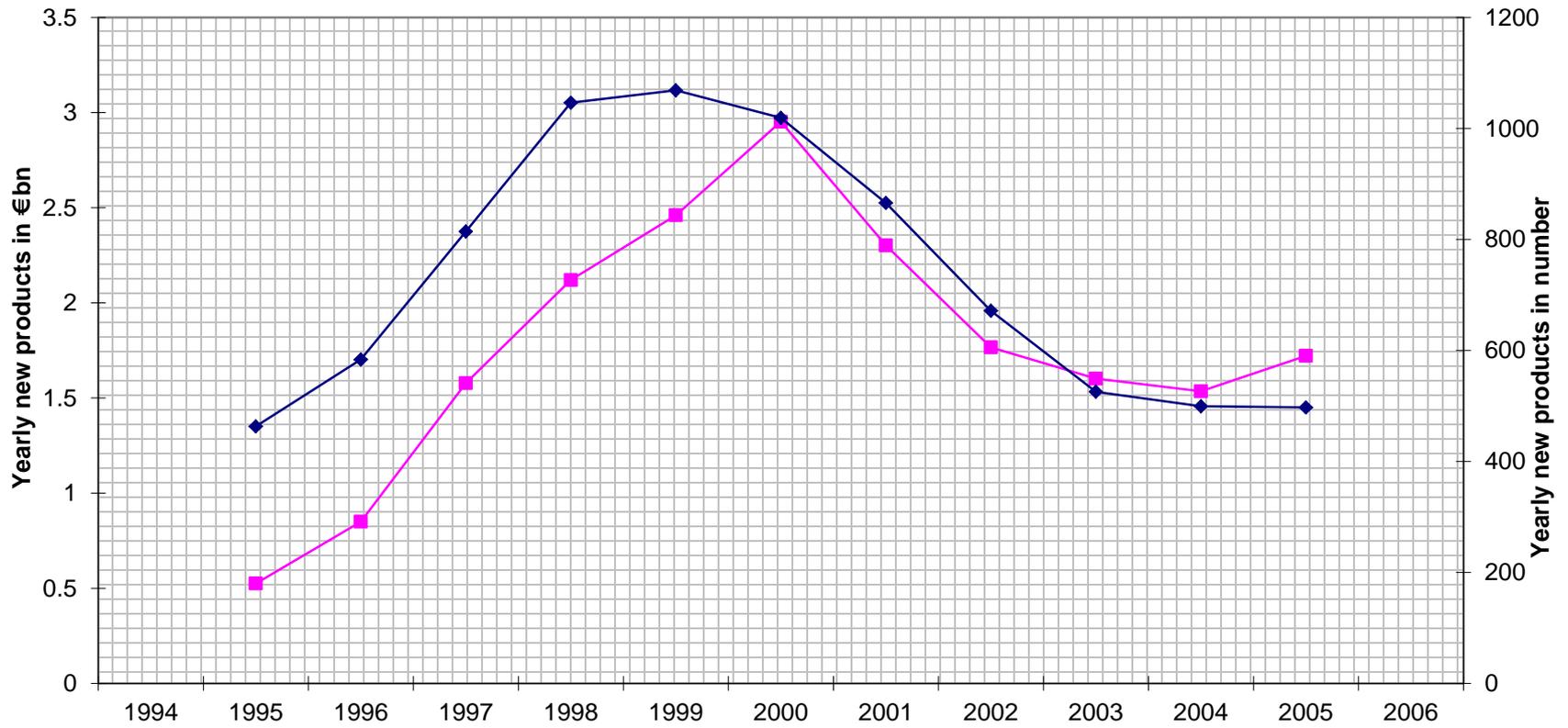
Systemic Risk Identification System

Size indicator: yearly invested sum and total outstanding products
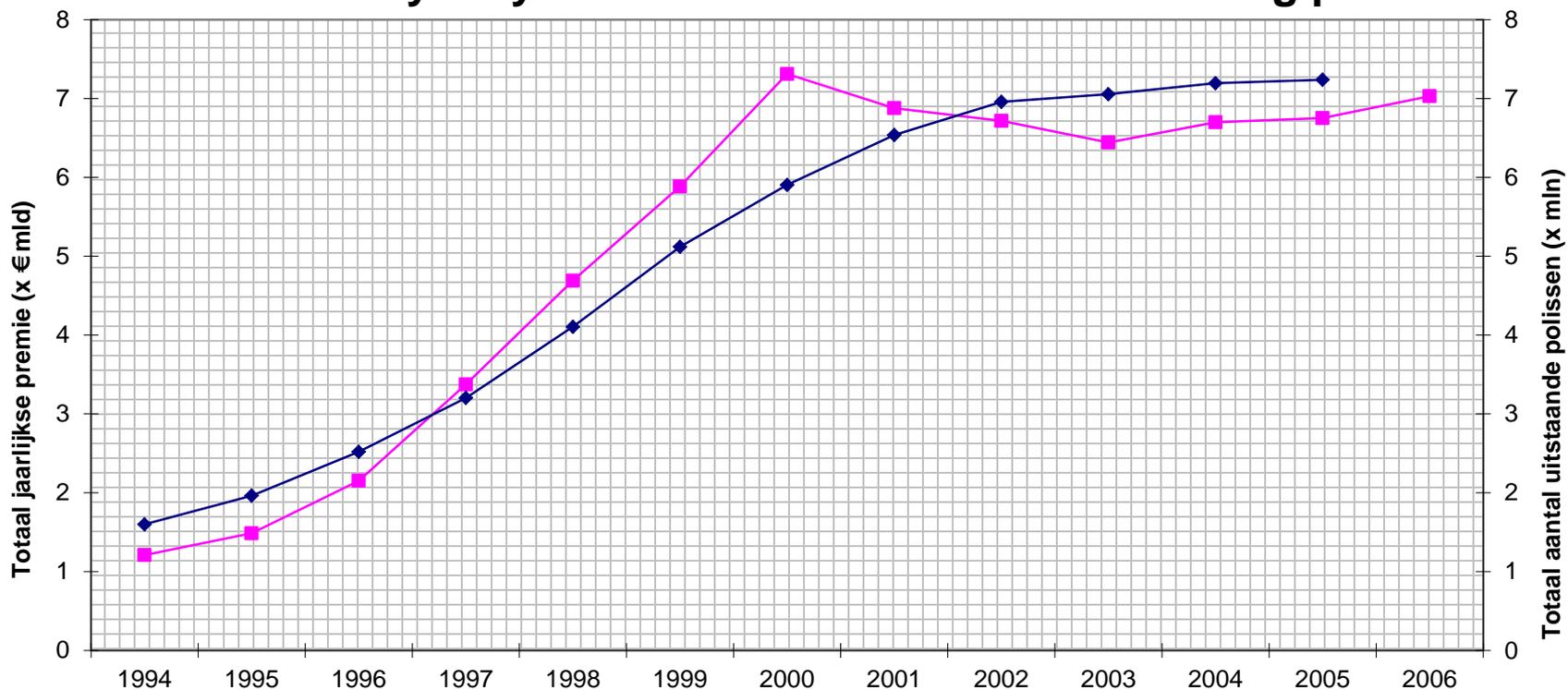
Systemic Risk Identification System

Size indicator: NAV of outstanding products

Systemic Risk Identification System

Size indicator: flow and stock footprints relative to other investments

Table I Yearly inflow in €M

year	U/L	CIS	Savings	Structured products
1991	**nb**	nb	1,625	nb
1992	**nb**	3,186	997	nb
1993	**nb**	7,444	-456	nb
1994	**1,211**	3,719	-87	nb
1995	**1,487**	958	2,946	nb
1996	**2,153**	1,973	3,803	nb
1997	**3,375**	4,934	419	nb
1998	**4,691**	5,689	4,684	nb
1999	**5,885**	6,143	4,928	nb
2000	**7,312**	15,025	845	nb
2001	**6,877**	3,853	15,321	nb
2002	**6,717**	2,226	9,077	1,843
2003	**6,442**	3,56	11,906	2,351
2004	**6,699**	-2,421	10,682	5,086
2005	**6,753**	-5,66	5,846	6,228
2006	**7,03**	373	6,966	6,374
totaal	**66.632** *	51.002**	79.502***	21.882****

Table II Actual value per year end

year	NAV U/L	NAV CIS	Savings
1991	**Nb**	26.1	89.764
1992	**Nb**	30.623	93.756
1993	**Nb**	42.838	96.5
1994	**5.057**	43.965	98.402
1995	**6.708**	47.409	104.826
1996	**9.369**	53.825	111.98
1997	**13.595**	65.088	114.774
1998	**18.588**	74.995	122.2
1999	**27.172**	103.565	130.347
2000	**31.836**	122.65	134.246
2001	**32.51**	113.659	152.885
2002	**29.979**	91.212	167.766
2003	**34.827**	98.533	185.094
2004	**39.785**	99.574	201.718
2005	**49.232**	107.257	210.968
2006		116.815	221.339

Systemic Risk Identification System

Concentration indicator: market shares

Nationale Nederlanden	20,6
Aegon	10,7
Interpolis	8,0
Zwitserleven	6,5
Achmea	5,9
Delta Lloyd	5,0
AMEV	5,0
Stad Rotterdam	2,9
ABN Amro	2,6
AXA	2,0

Systemic Risk Identification System

Efficiency indicator: cost structure of the product

| The investment of € 100 per month...	Month 1	Month 49	Month 349
Invested sum	**€ 100,00**	€ 100,00	€ 100,00
Cost of buying/selling units	€ 0,50	€ 0,50	€ 0,50
	€ 99,50	*€ 99,50*	*€ 99,50*
Upfront costs	€ 21,00	€ 21,00	€ 0,00
Ongoing costs	€ 17,00	€ 17,00	€ 17,00
Insurance risk premium	€ 0,00	€ 0,17	€ 13,00
Total sum invested in equity	**€ 61,50**	**€ 61,33**	**€ 69,50**
Presumed return (6%)	€ 0,22	€ 17,75	€ 350,00
Net asset value	*€ 61,72*	*€ 3633,23*	*€ 70277,29*
Cost of management insurer (0,5%)	€ 0,03	€ 1,51	€ 29,28
Cost of management investment fund (0,5%)	€ 0,03	€ 1,51	€ 29,28

Systemic Risk Identification System

Efficiency indicator: cost structure

| Total annual cost all standardized persons	number	% of total	% sum
<1,0%	3	1%	1%
1,0%<1,5%	28	8%	9%
1,5%<2,0%	63	18%	27%
2,0%<2,5%	74	21%	48%
2,5%<3,0%	74	21%	70%
3,0%<3,5%	57	16%	86%
3,5%<4,0%	23	7%	93%
4,0%<4,5%	7	2%	95%
>4,5%	19	5%	100%

Systemic Risk Identification System

Substitutability indicator: unit linked compared to competing products

Accumulated capital of a monthly investment of € 100 after 30 years

Average loss:
€ 20000

Most expensive	Cheapest	Average	Insurance and fund separately
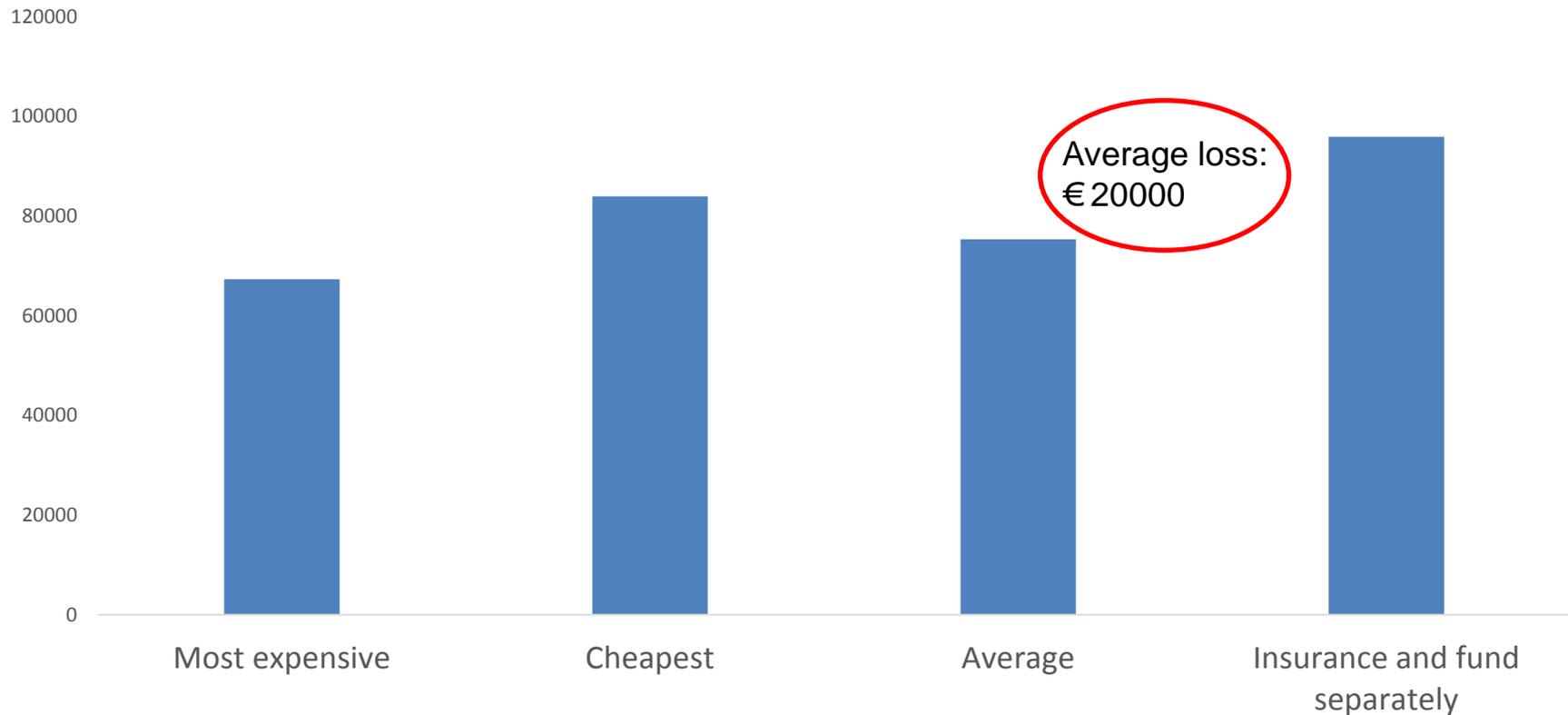
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Complexity and Leverage indicator: non-linear behaviour of U/L

Verzekeringspremie per maand

Legend: —— Verzekeringspremie bij rekenrendement   —— Verzekeringspremie bij gerealiseerd rendement
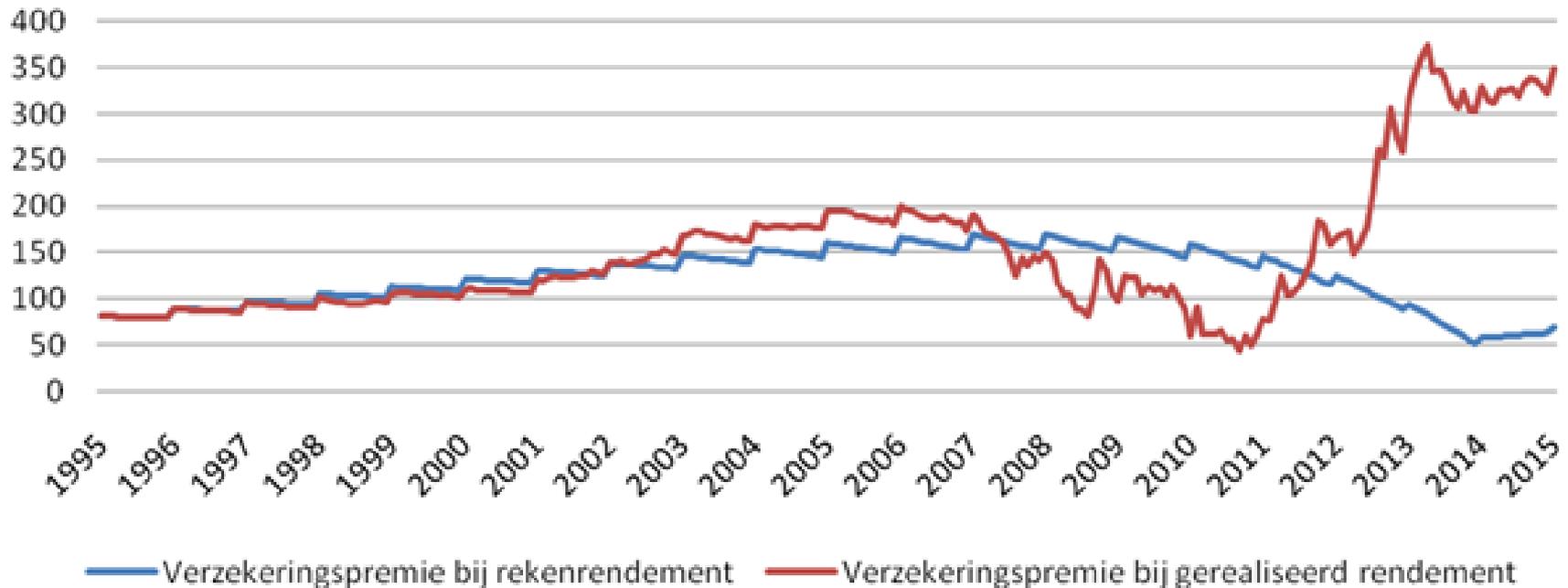
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Transparency indicator: name of products

Table: Name of products and product elements of unit linked products (investment-insurance products)

	Number	Percentage
Total number of products	1.203	100%
having the term investment in the name of the product	161	13,38%
not having the term of investment in the name of the product	**1.042**	**86,62%**
having the term insurance in the name of the product	205	17,04%
not having the term insurance in the name of the product	**998**	**82,96%**
having the term saving in the name of the product	149	12,39%
having the combination of investment and insurance in the name of the product	55	4,57%

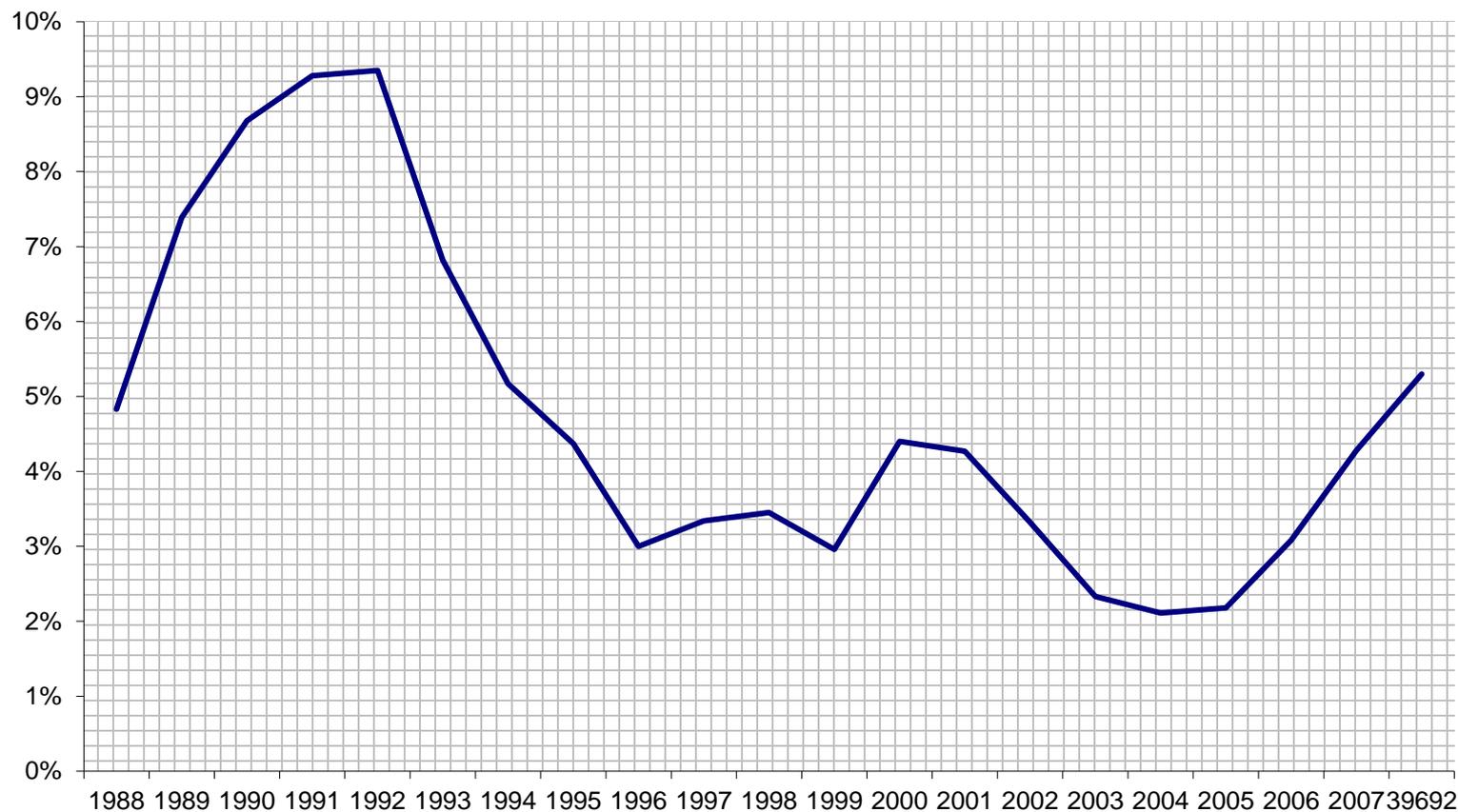# Systemic Risk Identification System

Transparency indicator: disclosure of key information

Table: Information on the annual communication to investors

|	stated	partly	not stated	total products
Information on investment (invested sum, date, price)	9	8	21	38
Information on costs and insurance cost	16	5	17	38
Value of the product (NAV, value after all costs)	19	19	0	38

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Macro factors. Macro financial indicator: Savings rate

Systemic Risk Identification System

Macro financial indicator: AEX Return
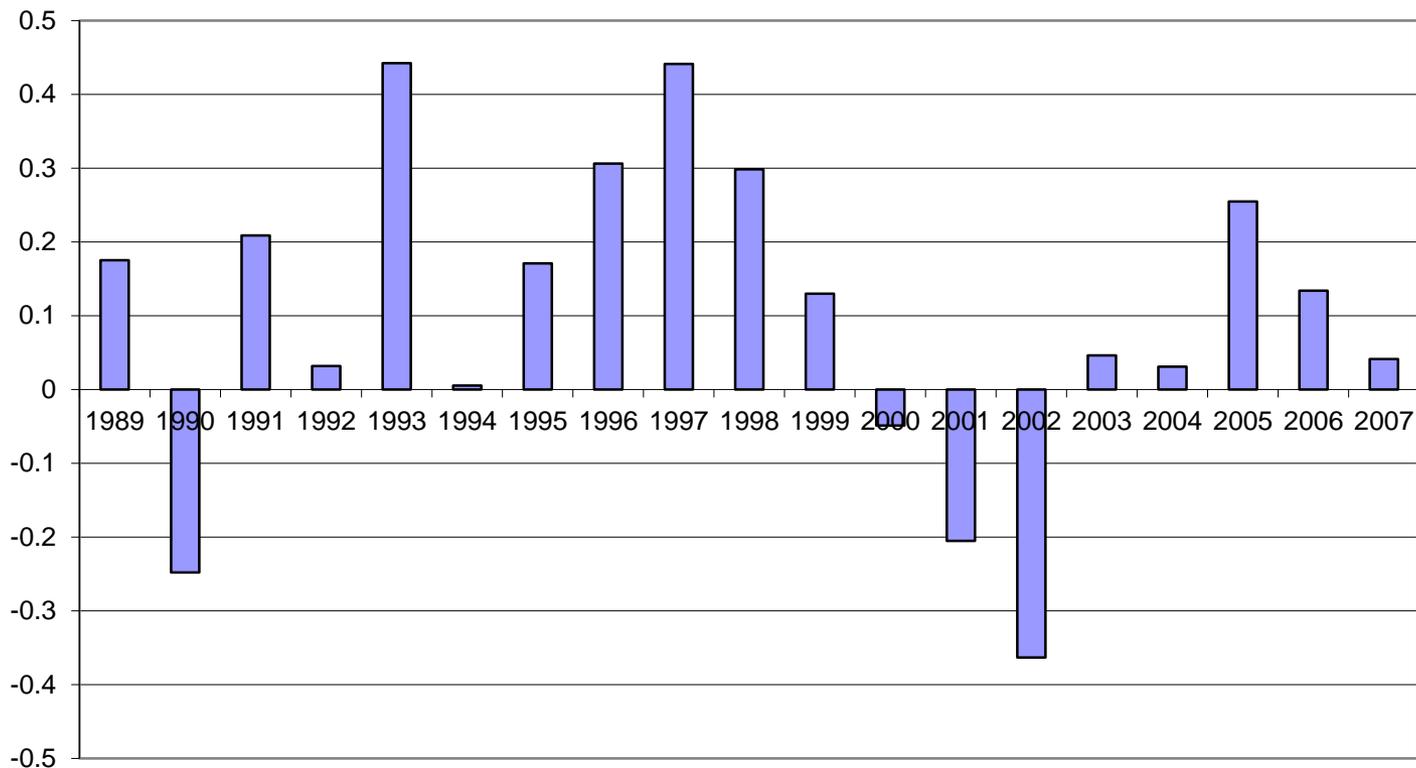
Systemic Risk Identification System

What happened after the analysis?

- Risk was identified and flagged as a big problem.

- National scandal. Confidence in insurers, banks and intermediaries collapsed.

- Entities were forced to compensate.

- Actions were taken to mitigate the risk in the future (regulation, supervision).

- Transparency was enhanced.

- New products entered the markets and existing products were changed.

Systemic Risk Identification System

What is the value?

- The example shows how the system could flag systemic risk concerns of one product for one country.

- The system forces systematic analysis and urges quantifying arguments.

- Systemic or not will remain judgmental.

- A centralized system of indicators also allows for learning and better future judgments.

Systemic Risk Identification System

Further work

- We have provided a menu of indicators for reference purposes but they require further development.

- The list is not exhaustive and there exists *substantial data gaps*.

- Thresholds also need to be established.

- "System" needs to be tested on various other potential risks: cybercrime and others.

- Significant resource implications for IOSCO.

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IOSCO Securities Markets Risk Outlook 2013-2014

- Evidence based analysis using a variety of inputs:
  - Data
  - Research reports
  - Academic reports
  - Regulators, global organizations reports
  - Market intelligence
  - IOSCO experts input

IOSCO Securities Markets Risk Outlook 2013-2014

Main Risks:

1. The *return of leverage* in products and investments can *destabilize* markets when interest rates go up.

2. *Capital flow volatility* in EM takes place in better developed markets of today, but is *harming economic growth already*. IOSCO will take a pro-active role in developing market structures.

3. At the moment *we are unable to assess the impact of the changes and challenges of the collateral space* and we need much more disclosure.

4. Big changes in derivatives markets *move risks around but don´t take them away*. Pooling them in CCPs make CCPs *too important to fail*.

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Research agenda – Sept 2014

1. Crowd funding and Peer-to-Peer lending. An exploratory global study (exp. end 2013)

2. Corporate bond market. Global developments and risks. (exp. Feb 2014)

3. Behavioural economics and incentives based regulation on firms (exp. Feb 2014)

4. Statistics website (basic version launch end 2013)

5. Securities Markets Risk Outlook 2014-2015 (exp. Sept 2014)