Risk Based Supervision of Pensions: Motivations and Emerging Practices

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What Do We Mean By Risk Based Supervision

- Focus “outcomes” of the investment management process rather than “inputs”
  - Dynamic characteristics of investment portfolios rather than quantitative limits
- Movement away from rule based compliance enforcement to the development of more flexible systems based on judgments about risk
- Establishment of organizational requirements and procedural standards for risk management
- Development of comprehensive risk measurement models to guide “supervisory attention” or select cases for intervention

Motivations: The Evolution of Private Pension Systems

- Increasing role and dependence on private systems
  - Demographic change makes public systems more difficult to sustain
  - International competition limits viable social insurance tax rates
  - Greater public policy concerns for stability of system and benefit outcomes
  - Need to produce more efficient outcomes
- Rising prevalence of defined contributions
  - Shift of nexus of risk bearing from employer/sponsor to members
  - Transition from agency risks to financial risks
- Integration of pension funds with financial services
- Transition from element of labor contract enforcement to oversight of financial intermediaries

Policy Motivations

- Integration of financial supervision authorities
  - Need to harmonize methods
  - Migration of methods from banking and insurance – Basel II and Solvency II
- Harmonization within EU and influence of international standard setting bodies
- Response to “Perfect Storm” and solvency crisis of 2001-2002
  - Many DB funds move below fixed solvency standards – at least temporarily
  - High volatility and short term losses in DC funds

Technical Motivations

- More timely and adaptive standards
  - Market based and flexible solvency and risk standards – adjust to rapid changes in conditions without legislative/regulatory action
- Conform financial reports with accounting standards
- Adjustment to complexity and evolution of financial markets
  - Adaptability to new financial products
- Greater efficiency of operations and allocation of capital
  - Facilitate movement toward efficient frontier
- Method for allocation of scarce supervisory resources to meet emerging scope of private pension

World Bank – IOPS Project

- World Bank - Review of More Developed and Exemplary Cases (Australia, Netherlands, Denmark, Mexico) to evaluate:
  - Common elements and motivations
  - Relationships with environment and design
  - Early lessons and potential impact
  - Identify challenges to address in further development
- IOPS - Review more recent examples to assess progress and lessons for more diverse range of settings

Characteristics of Four Systems Examined in World Bank Project

	Mandate	Cover %	Assets %GDP	Number of Funds	Legal structure	Type of Plan
Netherlands	Quasi-mandatory	90	120	700	Occupational	Mostly DB
Denmark	Quasi-mandatory	80	124	111	Occupational and open [1]	Mostly DC with absolute return guarantee (DB-like)
Australia	Mandatory	90	104	1,004	Occupational and open [2]	DC
Mexico	Mandatory	28	8	18	Open	DC with ceiling on downside risk (VaR)

The Basic Risk Management Architecture

For the institution:

- Risk management strategy
- Board committees
- Risk management functions in the managerial structure
- Internal controls
- Reporting responsibilities

For the supervisor:

- Regulations, including minimum risk management standards
- Risk-based solvency rule
- Risk scoring model guiding supervisory actions
- Internal organization of the agency, with specialist risk units

Market Discipline:

The contribution of the actuary, auditor, fund members, rating companies, and market analysts to sound risk management

Main Elements of RBS Found in Four Cases

- Requirements for risk management process within institutions
- Risk based solvency standards and stress testing methods
- Risk scoring methodology integrated into supervisory operations
- Disclosure of risk scores or proxies to enhance market competition
- Use of third party reviews
- Organization of supervisor to create risk specialist units

	Requirements for the Internal Risk Management Architecture	Risk-Based Solvency Rule	Risk Scoring Model	Role of Market Discipline/ Disclosure	Organization of Supervision Agency
Neth.	Internal review of Board's management of long term risks; Risk management in business plan	Fully developed risk-based solvency rule	Fully developed and unified framework; Applied to all financial institutions with relevant adaptations	Low; Possibly higher through single employer balance sheet	Integrated agency with specialized pension units and specialized ALM and Legal units
Den.	Board of Directors issues risk management guidelines	Hybrid rule: solvency margin + risk-based traffic light system	Partially developed	High	Integrated agency with specialized pension and risk units
Aus.	Risk management strategy and plan required for licensing	No formal solvency rules for DC plans [1]	Fully developed and unified framework considering; Applied to all financial institutions with relevant adaptations	Medium	Integrated agency with Lead supervisors and risk experts
Mex.	Very specific and detailed architecture in a regulation issued by the supervisor	No formal solvency rules for DC plans; However, VaR ceilings to limit downside risk	Partially developed: Elements of risk scoring for operational risk and financial risk	Medium/ High	Single entity, with specialized operational and financial risk units

Risk Management Structure and Procedures

- **Netherlands**
  - Risk management plan at registration
  - Centralized function & Accountability of board
- **Denmark**
  - Guidelines and plan by Board of Directors
- **Australia**
  - Guidelines and risk management plan at licensing. Trustee licensing standards
- **Mexico**
  - Specific requirements for policies, procedures, risk management committees and Chief Risk Officer

Solvency Standards – DB and Guarantees

- **Netherlands (FTK)**
  - Specified solvency margin calculated annually
  - Solvency buffer stress test
  - Long term continuity test
  - Recovery period maximum: I year for margin, 15 for stress test
- **Denmark**
  - Minimum risk based capital requirement
  - Market discount rate from zero coupon swap market d
  - Traffic lights stress test – Market signal

Solvency Standards - DC

- **Mexico**
  - Value at Risk (VaR) limits
  - Quantitative asset limits also remain
  - Directive action by supervisor when limit is exceeded, so far has not happened

Risk Scoring Methods

- **Netherlands (FIRM)**
  - Integrated system applied to all types of institutions
  - Standard templates and default scores as starting point
  - Inherent risk –mitigation = net risk
  - Comprehensive - Specific consideration given to management quality and risk management procedures
  - Probability and impact combined
- **Australia (PAIRS & SOARS)**
  - Risk scores mapped into supervisory response matrix
  - Distinction by fund size
  - Probability and impact treated separately
  - Weighted in non-linear formula to distinguish higher risks

Third Parties and Market Discipline

- All systems use third parties auditors requiring some assessment of risk management capacity
- All impose “whistle blower” obligations
- New accounting standards and regulatory requirements strengthen movement to market valuations
- Mexico has extensive monthly disclosure – consistent with open funds based system
- Denmark has annual disclosure – including risk assessment rating by regulator
- Netherlands and Australia have less reliance on disclosure – reflect occupational origins and DB character

Preliminary Assessment of Outcomes

Netherlands

- No change in coverage or plan design
- Asset allocation remains essentially the same
- Increase in average duration of assets – hedging exposure to solvency standards
- Movement to flexibility on the liability side through conditional indexation

- **Denmark**
  - More conservative portfolios, less equity
  - Increase in average duration of assets
  - Market trade-off in fund design – Guarantee levels lowered in return for potentially greater upside

Preliminary Assessment of Outcomes

- **Australia**
  - Little change in portfolio composition
  - Industry consolidation – in part due to stricter risk management requirement during re-licensing
- **Mexico**
  - Estimates of an expanded efficiency frontier
  - More diversified portfolios, although no evidence of efficiency gains, defined as higher return/same risk or lower risk/same ret.
  - VaRs still well below the ceiling, too early for assessment

Observations

- Risk based principles applicable to wide range of conditions
- Preliminary evidence suggest modest impact on financial structure of funds – primarily duration effects
- Too early to tell if objectives of efficiency gains are met - some positive indications
  - Potential greater risk return efficiency of portfolios
  - Product innovation – Contingent indexation and greater range and trade-offs in guarantees
  - Industry consolidation my provide economies of scale
- Political economy may be important – Introduction of risk based methods may permit relaxation of quantitative restrictions

Practical Challenges

- Requires greater financial sophistication by all parties – Not clear if how broad population will respond
- Full integration of risk parameters, quantitative limits and other asset controls presents major technical challenge
- Factors in Risk Scoring methodologies are somewhat arbitrary and subjective – developing evidence based factors is difficult
- If disclosed individual factors will be subject to fragmentation and challenges
- Retrospective nature of developing parameters – assumption of traditional asset class relationships
- Still very limited use of market discipline principles – requires shift in culture of supervision
- Staff with technical skills will be difficult to retain in public sector

Broader Policy Challenges

- Integrating risk parameters with retirement income targets – Short term solvency concepts from banks not necessarily applicable to longer term pension systems
- Potential pro-cyclical nature of outcomes
- Accommodating individual diversity of members risk preferences
- Adequacy of solvency standards for next financial crisis
- Transition to less subjective standards while retaining flexibility
- Political economy of acceptable risk levels

Risk-based Supervision of Pension Funds – Emerging Best Practices

Fiona Stewart IOPS /OECD

Contractual Savings Conference

2ND April 2008, Washington D.C.

RBS – IOPS Experience

Country	Risk-based Supervision	Stress Testing	Country	Risk-based Supervision	Stress Testing
Australia	X	X	*Kenya*	X	Plan to introduce
Austria	X	X	*Luxembourg*	Plan to introduce	
Belgium	X	X	*Mexico*	X	X
Bulgaria	Plan to introduce	Plan to introduce	*Namibia*	Plan to introduce	Plan to introduce
Chile	Plan to introduce	Plan to introduce	*Netherlands*	X	
Czech	X		*Poland*	Plan to introduce	
Finland	X	X	*Korea*	X	X
Germany	X	X	*Romania*	Plan to introduce	Plan to introduce
Hong Kong	X		*South Africa*	X	Plan to introduce
Israel	Plan to introduce	Plan to introduce	*Spain*	X	Plan to introduce
India	Plan to introduce	Plan to introduce	*Thailand*	X	X
Jamaica	X	X	*UK*	X	X

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Characteristics of Systems Examined in the IOPS Paper

	Supervisory Structure	Mandate	Cover %	Assets %GDP	Number of Funds	Legal structure	Type of Plan
Germany BaFin	Integrated	Voluntary	68	4	175	Contract based	90% DB
Kenya RBA	Specialist	Voluntary	15	14	995	Trust Based	Most DB
South Africa FSB	Integrated	Voluntary	Low	49	13,000	Trust Based	Most DC
UK TRP	Specialist	Voluntary	59	84	86,000	Trust Based	80/20 DB / DC

South African Approach

- Financial Services Boards partially integrated supervisor (no banks)
- RBS model adapted from Australia
- Same model for all financial institutions (NB pension funds, administrative + fund management institutions) - risk score determines supervisory approach
- Initial risk rating of the entity is determined as Impact x Probability
- Probability = Inherent Risk Score + (Management & Control Score -3) + Capital Support Score
- Supervisory response 1-5 results (1= theme work only / 5= formal inspection requested on an urgent basis)

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South African Approach

Impact rating	Determine the higher of the impact ratings according to the number of members or fair value of the assets, in either case at the previous financial year end (Where assessing an administrator, the numbers will be increased by a factor of 10)	
	Number of Members	**Asset size**
5	10 000 or more	More than R1000 million
4	1 500 to 9 999, inclusive	Between R500 million and R1000 million
3	500 to 1 499, inclusive	Between R100 million and R500 million
2	50 to 499, inclusive	Between R10 million and R100 million
1	Less than 50	Less than R10 million

Rating			Frequency of on-site visits
Priority score		**Description**	
5	E	Non-viable, insolvency imminent	Formal inspection to be requested on an urgent basis.
4	D	Future viability in doubt	Request the fund to lodge, within 3 months, a plan to mitigate risks. Schedule visit after assessment of this plan. The urgency will depend upon the FSB's satisfaction with the plan. All such funds to be visited within 36 months.
3	C	Some risk, but viability is not seriously doubted	Schedule to visit 15% a year, so that every fund receives a visit at least once every 72 months
2	B	Early warning	Theme work only
1	A	No or minor problems	Theme work only

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Kenyan Approach

- Retirement Benefits Authority specialized agency
- RBS model adapted from Australia
- Goal to measure solvency of DB schemes + investment risk of DC schemes
- Annual risk profiling - on-site inspections comprehensive/ targeted/ follow up (compliance manual + on-site inspection guidelines)
- Looking at stress-testing / VAR measures

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Kenyan Approach

Main risk areas:

- *Counterparty default*
- *Balance sheet + market*
- *Operational*
- *Liquidity*
- *Legal + regulatory*
- *Strategic*
- *Contagion + related counter party*

Main risk mitigants:

- *Quality of board of trustees*
- *Quality of principle officer*
- *Effectiveness of operational management*
- *Information systems + financial controls*
- *Adequacy of risk management systems*
- *Compliance culture + process*
- *Adequacy of independent review*

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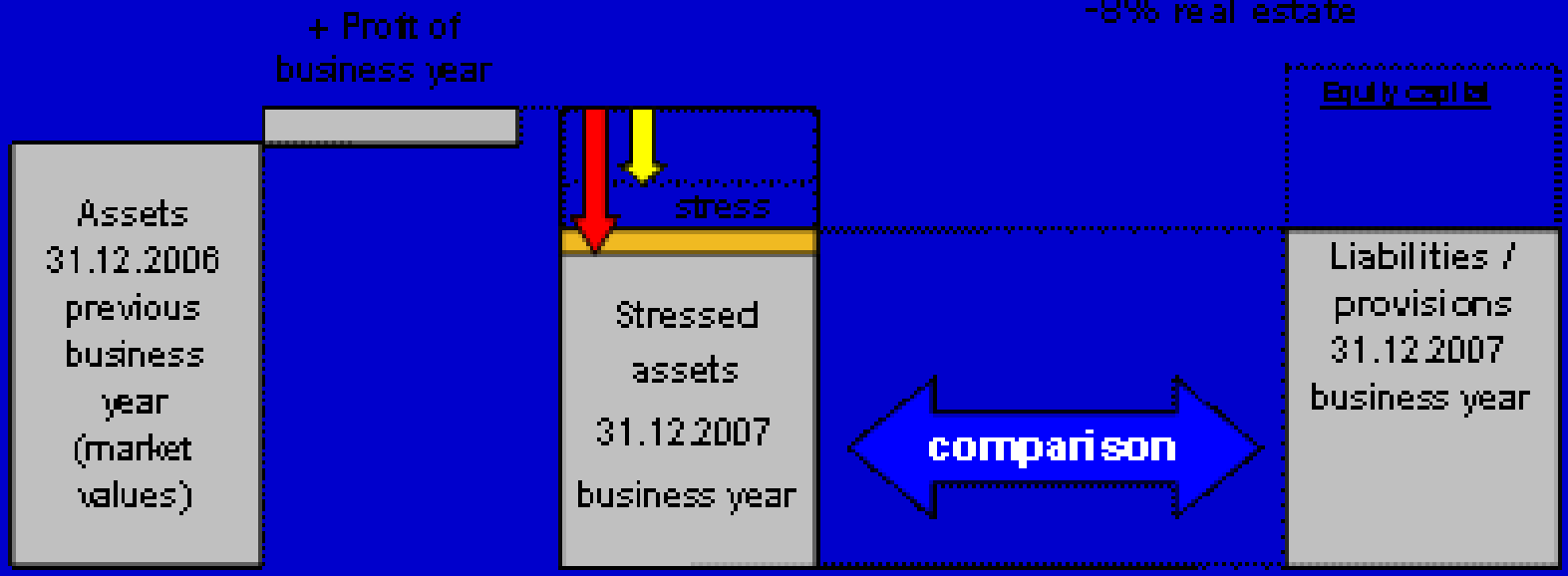
German Approach

- Occupational pension funds supervised by the Federal Financial Supervisory Authority (BaFin) –integrated supervisor from 2002
- Approach adapted from the insurance sector – based on measures, stress tests and risk scoring
- 'Scenario calculations for forecasts' submitted by insurance funds, Pensionskassen and Pensionsfonds several times a year to assess current financial situation and future trends should there be declines in investments.
- Stress tests additional reporting requirement for insurance companies + Pensionskassen (+quarterly internal stress tests for insurance companies)
- Risk-scoring on a traffic light basis – considers impact + quality (security, success, growth, quality of management)

German Approach

1.	Stress test R 10:	Loss of market value bonds:	-10%
		and credit risk:	BBB
2.	Stress test A 35:	Analog and in addition:	-35% shares
3.	Stress test RA 25:	Analog and in addition:	-20% shares
			-5% fixed income securities
4.	Stress test AI 28:	Analog and in addition:	-20% shares
			-8% real estate



Stress test as an indication-based early warning system

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UK Approach

- The Pensions Regulator specialized agency established 2005 (NB personal pension arrangement supervised by Financial Services Authority)
- Standard model for risk assessment – different supervisory response favouring guidance + communication over intervention
- New Scheme Specific Funding introduced at same time as TPR – based on prudent assumptions and recovery plans
  TRP uses filter mechanism based on triggers to identify schemes whose funding plans may be based on imprudent or inappropriate assumptions
- Pension Protection Fund also set up at same time - PPF impact being one of the risks TRP must consider
- 'Risk and Intervention Model' determines supervisory approach
  Triage approach to organise workflow

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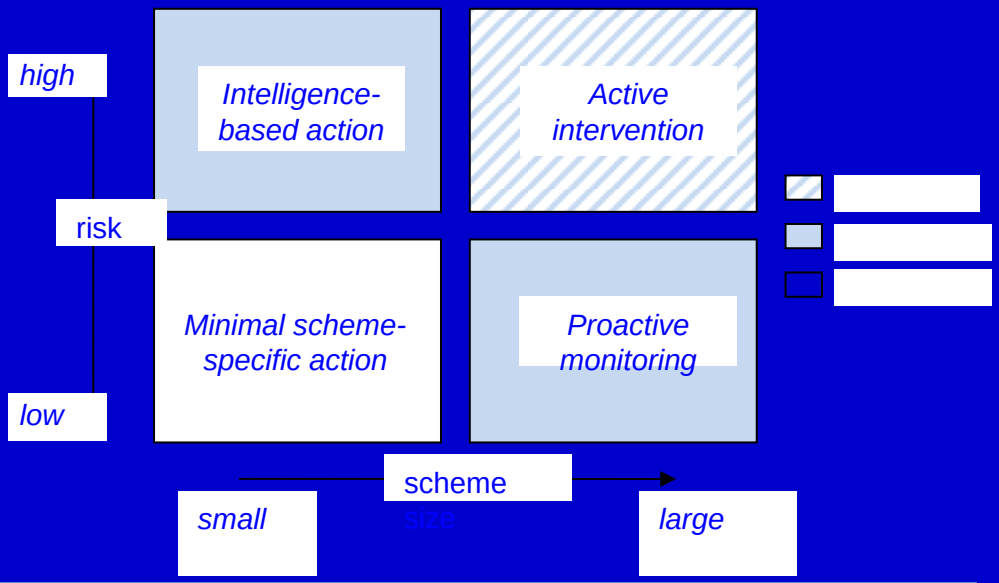
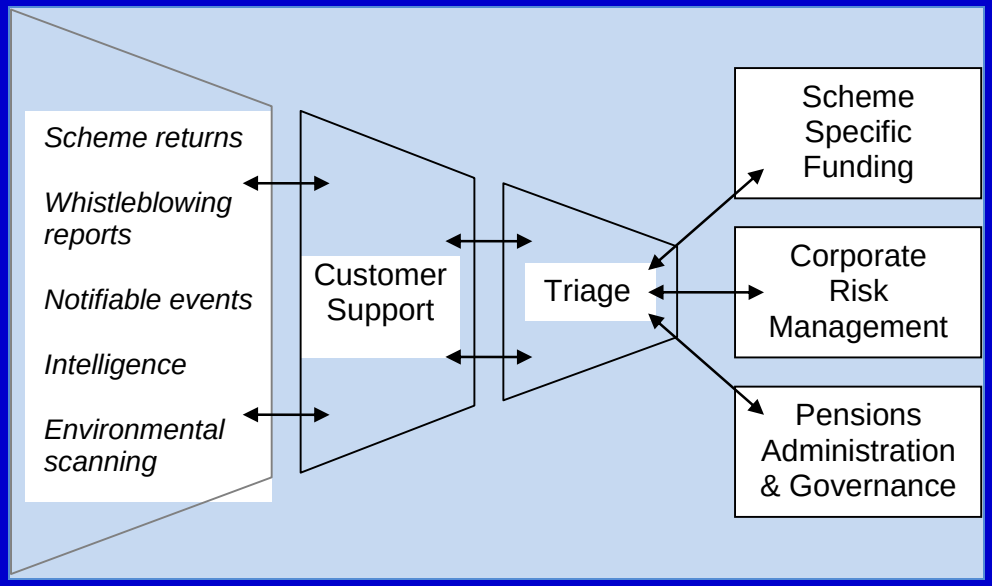
UK Approach





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Main Challenges when Adopting RBS

- Adapting models from other sectors/ institutions
- Reorganisation of Supervisory Authority
- Data collection
- Retraining staff
- Communicating with industry
- Necessary powers of the supervisory authority

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Adaptation of Models - Suggestions

- Look at a range of available models – consult widely and adapt carefully
- Consider adapting models created for the insurance sector for pension funds with guarantees
- Allow flexibility when applying a standardized model to various financial products
- Build in flexibility to upgrade models and systems on a regular basis
- Use pilot schemes and avoid a ‘big bang’ roll out across the entire pension industry at once

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Reorganisation of Supervisory Authority - Suggestions

- Allow plenty of lead time and do not underestimate the amount of change required by the authority
- Start to move to a risk-based approach whilst the supervisory authority has capacity, and before pension industry growth accelerates
- Build any new administrative structures gradually and allow flexibility/ time to adapt
- Begin to build risk-based methodology into existing rules-based systems
- If possible, introduce risk-based supervision at the same time as other pension reforms, and make sure other legislation is in line
- Consider the following structures:
  - cross-sectoral evaluation
  - separate departments analyzing / leading interventions on different risk categories

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Data Collection - Suggestions

- Make sure data collection is given proper place in the planning process when devising a risk-based supervisory approach
- Use existing data where possible to minimize costs
- Make sure have powers (legal requirements) to obtain data from pension funds (but consider persuasion, incorporating into risk-based analysis etc. rather than fines and sanctions)
- Consider rolling out the data collection process in stages (e.g. starting with larger pension funds first)
- Consider slim-line reporting requirements for small funds
- Make data submissions electronic where possible
- Explain clearly to all involved parties why the data needed and to what use it will be put

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Staff - Suggestions

- Make sure training is provided for *all* staff – covering the philosophy of risk-based supervision as well as the process
- Rearrange existing staff where possible to minimize costs
- Use international expertise / ask for international training assistance
- Hire or second some experts from 'risk-aware' sectors in the supervisory authority or the private sector
- Use 'lead-teams' to drive the reform process
- Leverage internal expertise for training where possible
- Make training on-going so staff understand how the approach and models are adapting, how they are fitting with industry developments etc.
- Leave plenty of lead time and flexibility and do not neglect basic management during reform process
- Provide training for trustees, fiduciaries or other key stakeholders

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Industry - Suggestions

- Explain the risk-based supervision externally, to the pension industry and a wide group of stakeholders
- Issue guidance notes explaining requirements of the various stakeholders and the standards expected of them
- Use informal discussion groups / road-shows to enlist feedback, take views on board and ensure 'buy-in' to process
- Ensure that communication is on-going, with pension funds understanding the new relationship with the supervisor, as well as just the information supplying requirements
- Use secondees to take the message back into industry
- Work closely with other professionals (accountants /actuaries)
- Ensure good communication between regulators and supervisors
- Make sure that 'whistleblowers' understand their role
- Communicate with the public to avoid major repercussions when future problems occur

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