2019 LIFE & ANNUITY SYMPOSIUM — SOCIETY OF ACTUARIES
May 20–21 • Tampa, FL

Session 10: Making Death Worthwhile

SOA Antitrust Disclaimer
SOA Presentation Disclaimer

SOCIETY OF ACTUARIES
Antitrust Compliance Guidelines

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NAIC Experience Reporting Agent & MIB Experience Reporting Agent

- NAIC Experience Reporting Agent
  - Begins in 2020 for VM-51
- MIB Experience Reporting Agent
  - Continues with New York Department of Financial Services
  - VM-51, Expense, Guaranteed Issue, Traditional Simplified Issue
- Commonality: Automated Scrubbing of Data
  - NAIC Automated Process: Statistical Plan for Mortality
  - MIB's Phase 1: Syntax, Validation and Reasonableness (SVR)
  - MIB working with NAIC for consistency of automated results

Individual Life Data Quality

- Communication with Companies

- Mandatory Data Call Process – 3 Step Process
  - Syntax, Validation, and Reasonableness (SVR)
  - Actuarial Analysis and Review (AAR)
  - Reports to Regulators

- Mandatory Results to SOA's Individual Life Experience Committee (ILEC)
  - Post Project Review
  - Reporting Database
  - Results to ILEC

- Next Steps: Predictive Modeling - Outlier Detection

Communication with Companies

- MIB Web portal
  - Data call timeline
  - Data Format (17 pages) and Data Instructions with numerical examples (104 pages)

- Webinars & Presentations
  - Given before initial data call, Level Term & Secondary Guarantee expansions
  - On MIB Website for submitting companies

- Company Questions and MIB Answers
  - Via e-mail during data submissions, SVR, and AAR
  - Conference Call between Company and MIB

Communication to Companies: MIB Website

VM-51 Data Format –Preferred NonSmoker

12	57	1	Preferred Class Structure Indicator	0 = If no reliable information on multiple preferred and standard classes is available or if the policy segment was issued substandard or if there were no multiple preferred and standard classes available for this policy segment or if preferred information is unknown. 1 = If this policy was issued in one of the available multiple preferred and standard classes for this policy segment Note: If Preferred Class Structure Indicator is 0 or if preferred information is unknown, leave the next four items blank.
13	58	1	Number of Classes in Nonsmoker Preferred Class Structure	If Preferred Class Structure Indicator is 0 or if Smoker Status is 0, 3 or 4, or if preferred information is unknown leave blank. For nonsmoker or no tobacco usage policies that could have been issued as one of multiple preferred and standard classes, enter the number of nonsmoker preferred and standard classes available at time of issue.
14	59	1	Nonsmoker Preferred Class	If Preferred Class Structure Indicator is 0 or if Smoker Status is 0, 3 or 4, or if preferred information is unknown leave blank. For nonsmoker policy segments that could have been issued as one of multiple preferred and standard classes: 1 = Best preferred class 2 = Next Best preferred class after 1 3 = Next Best preferred class after 2 4 = Next Best preferred class after 3 5 = Next Best preferred class after 4 6 = Next Best preferred class after 5 7 = Next Best preferred class after 6

Data Instructions – Preferred Nonsmoker

Example 2:

Alex, Ben, Calvin and David all bought policies from ABC Insurance Co with the same plan and face amount. None of them smoke cigarettes or use tobacco products. At that time there was a Nonsmoker Preferred Class Structure of 4 (three preferred classes and one residual standard class). Alex was deemed to have excellent health and was put in the best preferred class. Ben had decent health and was put in the lowest of the three preferred classes. Calvin's health wasn't so great but not so bad that it was considered substandard so Calvin was issued a policy in the residual standard class. David's health was worse than Calvin's and he was issued a substandard policy.

Nonsmoker Class Structure:
        Class 1, the best-preferred class
        Class 2, the next best-preferred class after class 1
        Class 3, the next best-preferred class after class 2
        Class 4, the residual-standard class

Their records show:

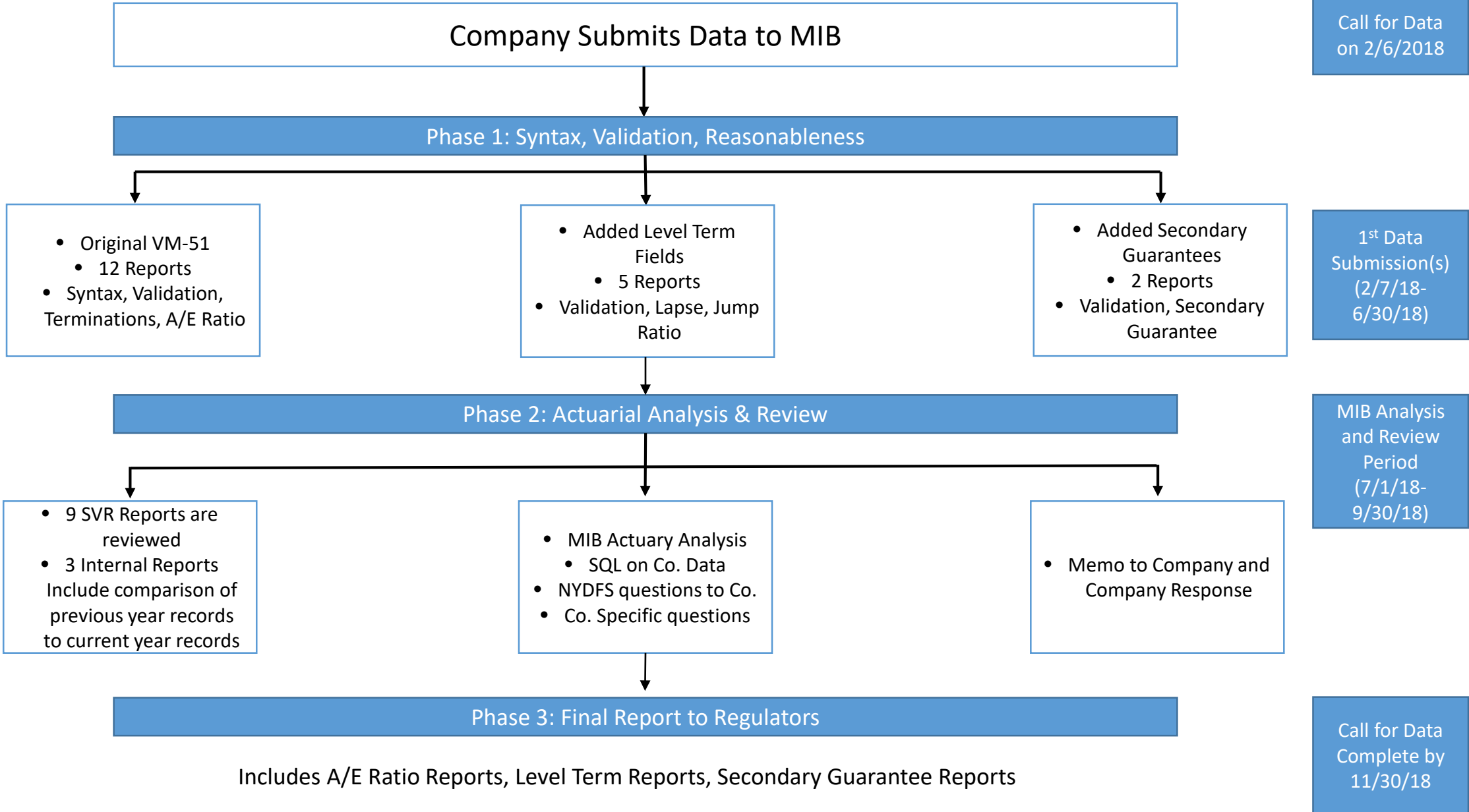|	Item 3		Item 11	Item 12	Item 13	Item 14		Item 18	
	Policy Number		Smoker Status	Preferred Class Structure Indicator	Number of Classes in Nonsmoker Preferred Class Structure	Nonsmoker Preferred Class		Substandard Indicator	
Alex	10023		1	1	4	1		0	← Best Preferred
Ben	10024		1	1	4	3		0	← 3rd best preferred
Calvin	10025		1	1	4	4		0	← Residual standard
David	10025		1	0				1	

Since this policy is substandard it is not considered to be part of the preferred class structure and has a Preferred Class Structure Indicator '0'

Policies issued in the nonsmoker residual standard class will always have the same value entered in the fields, 'Number of Classes in NS Preferred Class Structure' and 'NS Preferred Class'

Mandatory Data Call
3 Step Process

# MIB Experience Reporting Agent
Mandatory Data Call Process

| Company Submits Data to MIB | Call for Data on 2/6/2018 |

↓

Phase 1: Syntax, Validation, Reasonableness

• Original VM-51 • 12 Reports • Syntax, Validation, Terminations, A/E Ratio	• Added Level Term Fields • 5 Reports • Validation, Lapse, Jump Ratio	• Added Secondary Guarantees • 2 Reports • Validation, Secondary Guarantee	1st Data Submission(s) (2/7/18-6/30/18)

↓

Phase 2: Actuarial Analysis & Review

• 9 SVR Reports are reviewed • 3 Internal Reports Include comparison of previous year records to current year records	• MIB Actuary Analysis • SQL on Co. Data • NYDFS questions to Co. • Co. Specific questions	• Memo to Company and Company Response	MIB Analysis and Review Period (7/1/18-9/30/18)

↓

Phase 3: Final Report to Regulators

Includes A/E Ratio Reports, Level Term Reports, Secondary Guarantee Reports

| | Call for Data Complete by 11/30/18 |

Phase 1:
Syntax, Validation and Reasonableness (SVR)

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Syntax, Validation and Reasonableness (SVR)
Sample of 19 SVR Reports

- Data Submission Venn Diagram

- Syntax Report

- Validation Report

- Consistency of Data from Year to Year

- CY Terminations – Check for Due & Unreported

- Single Life A/E Ratio Report – NS Pref Sheet

Data Submission Venn Diagram
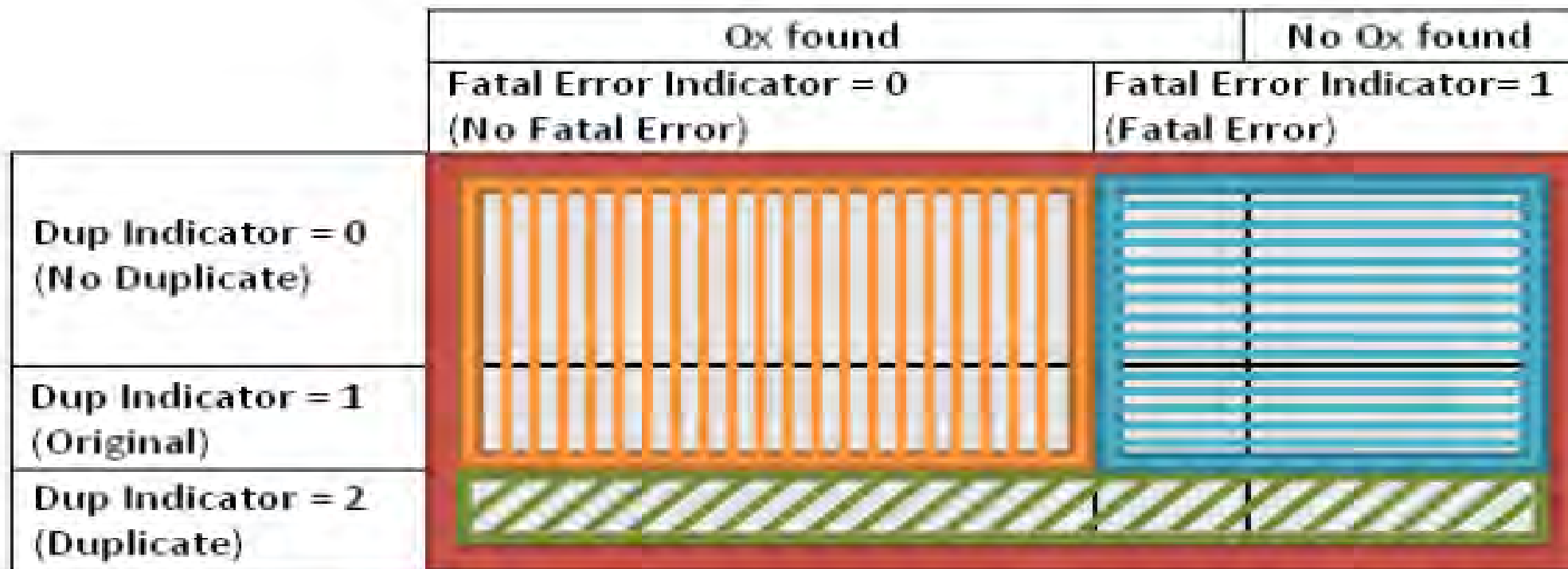
Syntax Report

Double click on a number to get a new sheet with a separate row for each record.

Segment_Number	(All)
Termination_Reason	(All)
Inforce_indicator	(All)
Plan_Code	(All)
Plan_Group	(All)

Business Rule	Total
Face Amount of Insurance at Issue must be Non-negative Integer*	
Error Records	44
Face Amount of Insurance at the Beginning of the Observation Year	$31,946,758
State of Domicile must be valid state abbreviation	
Error Records	3
Face Amount of Insurance at the Beginning of the Observation Year	$900,000
Type of Secondary Guarantee must be one of: 00, 01, 02, 03, 04, 05, 06, 11, 12, 13, 21, 22, 23 or blank	
Error Records	3
Face Amount of Insurance at the Beginning of the Observation Year	$565,845
Total Error Records	**50**
Total Face Amount of Insurance at the Beginning of the Observation Year	**$33,412,603**

Validation Report

Double click on a number to get a new sheet with a separate row for each record.

Expand the '+' for additional levels of detail on flags. There are three levels of detail.

Base Segment Indicator	(All)
Joint Life Indicator	(All)
Logic_Type	(All)
SegmentNumber	(All)
Plan_Group	(All)
PreferredIndicator	(All)
Policy_Type	(All)
Joint_Single_General_Flag	(All)
FatalErrorIndicator	(All)

Flag Groups	Number of Flags
Misc Flags	
Field 11: Smoker Status	
Please verify that these policies were underwritten for Smoker Status prior to 1975	2
Please verify that the smoker status at issue of these policies, issued to juveniles, is 'nonsmoker'	2
Field 08: Age Basis	
Multiple Age Basis codes in file.	20
Preferred Flags	
Field 18: Substandard Indicator	
Substandard Indicator should not be '2'. Single Life policies should not be uninsurable .	1
Grand Total	**25**

Consistency of Data from Year to Year

2. Single Life & Joint Life

2016 Submission

Row Labels	# Of Records	% Of Records
Single Life	59,719	89.5%
Joint Life	7,012	10.5%
Grand Total	**66,731**	**100.0%**

2015 Submission

Row Labels	# Of Records	% Of Records
Single Life	59,719	89.5%
Joint Life	7,012	10.5%
Grand Total	**66,731**	**100.0%**

3. Base Segments & Non-base Segments

2016 Submission

Row Labels	# Of Records	% Of Records
Base Segments	66,026	98.9%
Non-Base Segments	705	1.1%
Grand Total	**66,731**	**100.0%**

2015 Submission

Row Labels	# Of Records	% Of Records
Base Segments	66,026	98.9%
Non-Base Segments	705	1.1%
Grand Total	**66,731**	**100.0%**

4. Additions & Deletions & Resubmissions on Base, Non-Base Segments

2016 Submission

Row Labels	# Of Records	% Of Records
Base Segments	**66,026**	**98.9%**
Resubmission	66,026	98.9%
Non-Base Segments	**705**	**1.1%**
Resubmission	705	1.1%
Grand Total	**66,731**	**100.0%**

2015 Submission

Row Labels	# Of Records	% Of Records
Base Segments	**66,026**	**98.9%**
Resubmission	66,026	98.9%
Non-Base Segments	**705**	**1.1%**
Resubmission	705	1.1%
Grand Total	**66,731**	**100.0%**

CY Terminations – Check for Due & Unreported

Actual_Termination_ Year	Termination_Reported _Year	Termination_Reported_ Month	Number of Records
2013	**2013**	01	259
		02	275
		03	270
		04	314
		05	278
		06	239
		07	295
		08	261
		09	246
		10	251
		11	240
		12	250
	2013 Total		**3,178**
	2014	01	44
		02	13
		03	7
		04	1
	2014 Total		**65**
2013 Total			**3,243**

Single Life A/E Ratio Report – NS Pref Sheet

Num of Classes in NS Preferred Class Structure	NS Pref Class				
	1	2	3	4	Grand Total
2					
2001 VBT A/E Ratio by Amt	76.5%	74.7%			75.9%
Actual Deaths	55	21			76
2001 VBT A/E Ratio by Policy	78.6%	73.6%			77.2%
Policies Exposed	5,244.7	2,107.7			7,352.5
3					
2001 VBT A/E Ratio by Amt	9.8%	42.9%	59.2%		44.7%
Actual Deaths	4	7	21		32
2001 VBT A/E Ratio by Policy	41.2%	45.9%	61.2%		54.0%
Policies Exposed	3,773.6	3,194.1	4,887.5		11,855.3
4					
2001 VBT A/E Ratio by Amt	0.0%	0.0%	333.8%	0.0%	39.6%
Actual Deaths	0	0	1	0	1
2001 VBT A/E Ratio by Policy	0.0%	0.0%	124.4%	0.0%	14.7%
Policies Exposed	2,412.4	1,230.0	611.8	1,151.5	5,405.8
Total 2001 VBT A/E Ratio by Amt	**60.3%**	**55.9%**	**72.3%**	**0.0%**	**60.4%**
Total Actual Deaths	**59**	**28**	**22**	**0**	**109**
Total 2001 VBT A/E Ratio by Policy	**71.9%**	**61.3%**	**62.6%**	**0.0%**	**66.2%**
Total Policies Exposed	**11,430.7**	**6,531.9**	**5,499.3**	**1,151.5**	**24,613.5**

Phase 2
Actuarial Analysis and Review (AAR) Memo

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Actuarial Analysis and Review (AAR) Memo

- **After Company review of Phase 1 SVR Reports**

- **MIB's Actuaries analyze SVR Reports**
  - Company Specific
  - Compare to prior years
  - Additional SQL Reports may be given

- **Template for AAR memo to companies**
  - Standard Questions – Includes questions from NYDFS
  - Company Specific Questions – check list
  - Assures consistency and thoroughness in each Memo to Company

Example of 32 Page Template for AAR Memo

LSS
LIFE STATISTICAL SERVICES

A service of **mib**

Standard Questions (For All Companies - continued)

        i.   Do the lapse rates for the different premium jump ratios correspond to your company's expectations for the different level term products?

    b.   In the file "Lapse Rate by Premium Mode", the sheets 'SL Premium Mode All Plans' and 'JL Premium Mode All Plans'.

    c.   In the file "Lapse Rate by Plan Type and Duration", the sheet 'All Plans'.

4.   For the ==Secondary Guarantee Report==, please verify the A/E ratio and Lapse rates are reasonable by type of secondary guarantee and operative secondary guarantee because this report will be sent to the NYDFS.

Questions Regarding Your Reports (If Applicable)

(A.   Use the following points for mortality study portion)

1.   You did not submit any UL, VL, ULSG or VLSG policies. For this data submission, these policies are to be submitted. Please confirm that XXXXX does not sell this business.

2.   You did not submit any non-base records. Please confirm that you do not sell term

Actuarial Analysis and Review (AAR) Memo

- AAR Memo has consistent content
  - Reflects prior responses from company
- Acts as checklist of metrics that need company review
- Pinpoints specific parts of data submission that need additional confirmation
- Contains questions posed by NYDFS regulators

Company Response to
Actuarial Analysis and Review (AAR) Memo

Company

- Provides analysis/explanation of metrics
- Confirms specific parts of data submission
- Responds to regulator's questions

Company response given to regulators

Phase 3
Report to Regulator

MIB

- Functions as intermediary between company and regulator
  - Does not express opinion or interpretation
  - Conveys input from company to regulator
- Company receives same Single Life A/E Ratio Report given to Regulator

Company

- Validates Single Life A/E Ratio Report
- Responses to AAR Memo included in Report to Regulator

Phase 3
Report to Regulator

Regulatory Report:

- Uses most recent company data submission

- Contains company responses to AAR memo

- Excel reports
  - Company has same reports
  - Company has commented on report results

**MIB Provides Results to
SOA's Individual Life Experience Committee**

Post Project Review of Data Call
- Performed for each company
- Areas evaluated
  - Terminations
  - Preferred
  - Level Term
  - Secondary Guarantees

MIB Provides Results to SOA's Individual Life Experience Committee

Reporting Database

- Consistent formats for observation years 2009 - 2016
- Individual records for each company and each observation year
- Basis of reporting to SOA's Individual Life Experience Committee (ILEC)
- Results to ILEC are aggregated and de-identified

MIB Provides Results to SOA's Individual Life Experience Committee

- *Face-to-face meetings and conference calls*
- *Specific ILEC questions addressed*
- *Provide reports on:*
  - *Overall results*
  - *Juvenile*
  - *Term*
  - *Preferred*

Next Steps Predictive Modeling – Outlier Detection
Company Grouped A/E Ratio for Year 2005
Outliers Present – Range 40% to 240%

Next Steps Predictive Modeling – Outlier Detection
Company Grouped A/E Ratio for Year 2005
Outliers Removed - Range 80% to 110%
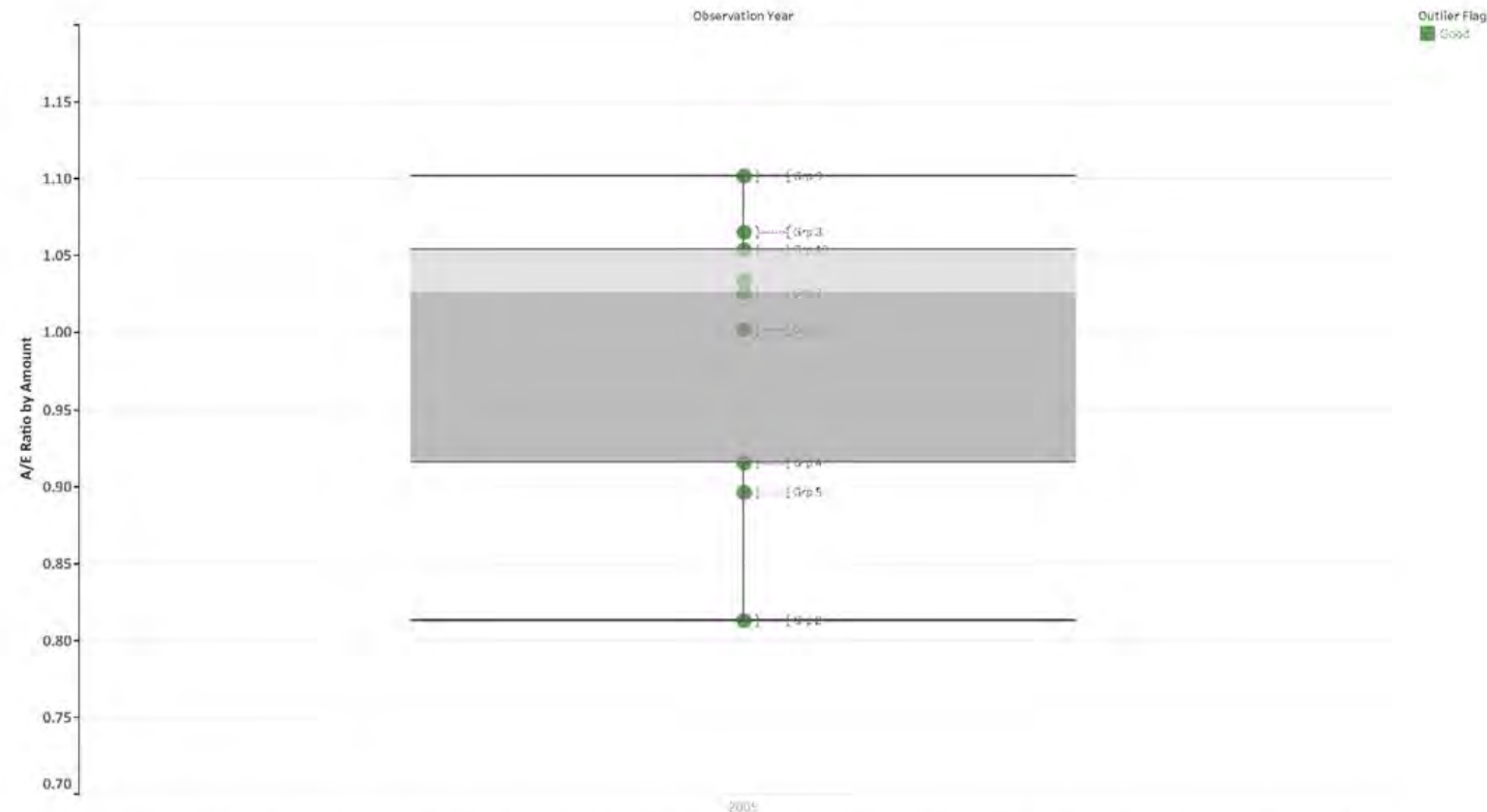
Individual Life Data Quality
From Mandatory Data Call to ILEC

- **Communication with Companies**

- **Mandatory Data Call Process – 3 Step Process**
  - **Syntax, Validation, and Reasonableness (SVR)**
  - **Actuarial Analysis and Review (AAR)**
  - **Reports to Regulators**

- **Mandatory Results to SOA's Individual Life Experience Committee (ILEC)**
  - **Post Project Review**
  - **Reporting Database**
  - **Results to ILEC**

- **Next Steps: Predictive Modeling - Outlier Detection**

Questions????

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Society of Actuaries

2019 Life & Annuity Symposium

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From Warehouse to Table

- How does ILEC get data used for research?

- What types of analyses are done by the committee?

- How can industry experience data become the basis for an industry mortality table?

- What new data is becoming available?

- What can you do with it?

From Warehouse to Table

- SOA released publication "Table Development", by David B. Atkinson, FSA in February 2018
  - https://www.soa.org/resources/tables-calcs-tools/table-development/
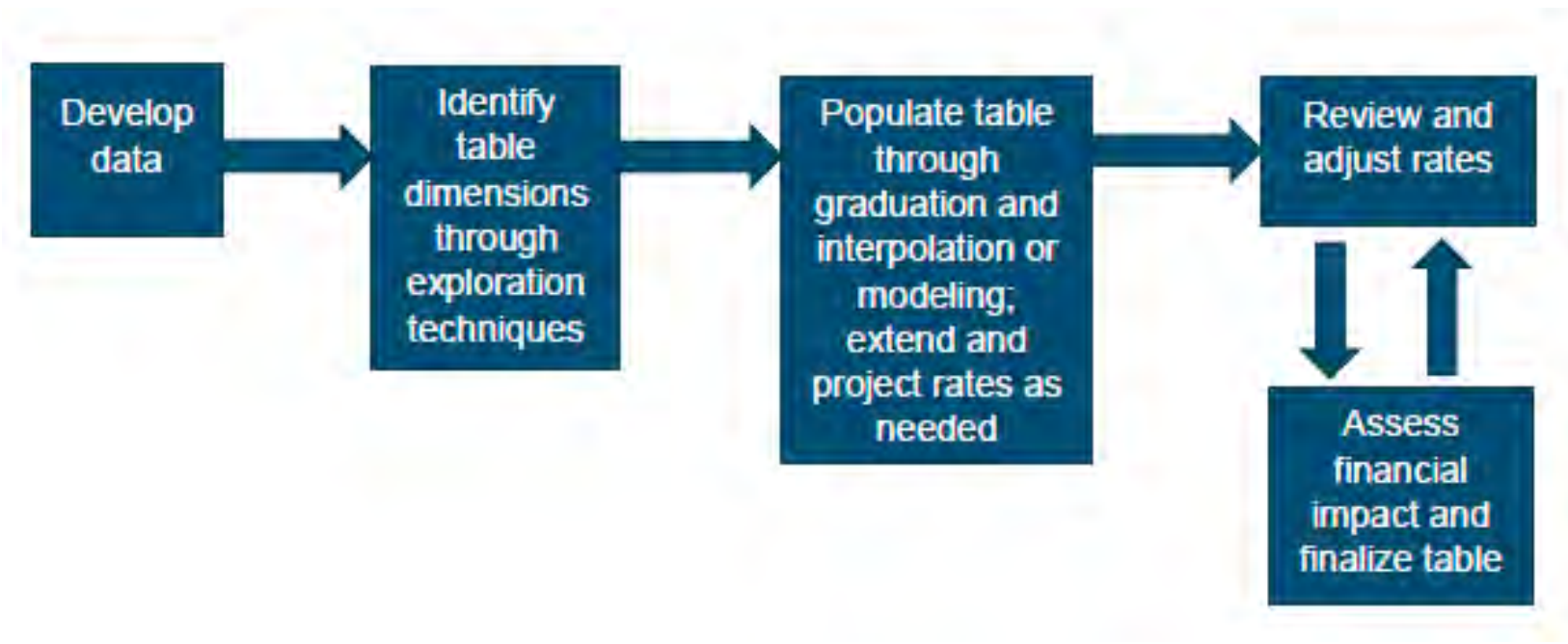
From Warehouse to Table

- SOA and Academy jointly released "2015 Valuation Basic Table Report" in March 2018 from the Academy/SOA Valuation Basic Table Team
  - https://www.soa.org/resources/experience-studies/2015/2015-valuation-basic-tables/
- Final product
  - Table of mortality
    - Gender, Smoking Status, Issue Age, Duration (Select & Ultimate), ANB/ALB
    - RR Versions
  - Improved to 2017 CSO Unloaded
  - Loaded to 2017 CSO
    - New valuation table for Principle Based Reserves
    - Used to credibility-blend company experience to industry

2015 VBT Table Development

- Began with ILEC 2002-2009 data
  - Highly granular: individual issue ages and durations for all cells
  - De-identified so individual contributing companies not revealed to committee
  - Personal protected information removed
  - Processed by MIB

Study/Table	Exposure		Actual # Claims	Companies
	By Amount	Policy-Years	By Number	By Number
1990-1995 / 2001 VBT	$5.7 trillion	175 million	1.2 million	21
2002-2004 / 2008 VBT	$6.9 trillion	75 million	0.7 million	35
2002-2009 / 2015 VBT	**$31 trillion**	**266 million**	**2.6 million**	**51**

2015 VBT Table Development

- Several observations made
  - Recent experience more favorable than prior
  - Nonsmoker experience more favorable than smoker experience
  - A/E (2008 VBT) was very low at issue ages above 80
  - A/E declined as Face Amount increased (to a point)
  - Experience at Issue Ages > 70 fluctuated significantly by duration
    - Policy size and lower credibility were big drivers

2015 VBT Table Development

- Produced two tables
  - ILEC 02-09
  - 2015 VBT

2015 VBT Table Development

- ILEC 02-09
  - Two datasets: one for Ultimate data and one for Select data
  - Graduated ultimate data first
    - Used as offset in select period model
  - Special consideration for older age and juvenile
  - Data credible through issue age 90
  - Juvenile issue ages 0-17 ultimate only
  - Monotonicity above attained age 30 by duration (horizontal), by issue age (vertical), and as duration increases for same attained age (diagonal)
  - Males rates not lower than Female for same issue age, duration, smoker
  - Smoker rates not lower than Nonsmoker for same issue age, duration, gender

2015 VBT Table Development

- ILEC 02-09
  - Graduation: Generalized Additive Model (GAM)
    - Identified significant predictors of ultimate mortality as:
      - Gender, Attained Age, Issue Age
      - Issue Year Era, Face Amount Band were considered but because majority of ultimate data from pre-1980 issue year era for Face < 10,000 and interaction of issue year era and face amount band, they were not included in final model
    - Treated all ultimate data as composite (ignored smoker status) for graduation and then developed smoker distinct rates
  - Extreme high ages (>95)
    - Reviewed outside sources and determined an omega rate of 0.5 at age 112
    - Fit a cubic curve using final GAM model q for attained ages 93, 94, 95 going to 0.5 at 112, 113

2015 VBT Table Development

- ILEC 02-09
  - Graduating select data
    - Identified significant predictors to be gender, smoking status, issue age, duration
    - Considered, but eliminated issue year era and face amount band
  - Adjustments
    - Some smoothing for young males and older males
    - Further adjustments to preserve monotonicity
    - Select smoker distinct rates for attained ages 88 to 99 smoothed to join ultimate rates

2015 VBT Table Development

- From ILEC 02-09 to 2015 VBT
  - Applied mortality improvement from midpoint of experience 3/1/06 to 7/1/15
  - Shift in Preferred Prevalence
    - As duration increases in the experience, more of the business was written in a time with no preferred underwriting. Factors were developed to estimate the effect of this shift to preferred underwriting on future mortality.
  - Removal of Post-Level Term Anti-selection
    - Actuaries use separate factors for post-level term exposures, so the VBT should exclude this experience
  - Extend to Issue Age 95
    - Calculated duration 1 to ultimate mortality ratios for issue ages 80 to 90 and extended to 95 using an approximate quadratic extension.
    - Estimated issue age 91, duration 3 rate and interpolated other along diagonals

2015 VBT Table Development

- From ILEC 02-09 to 2015 VBT
  - Multi-step process to determine select period based on observed data
  - Generally 25 years for males and 20 years for females at issue ages < 55
  - This period shortens above issue age 55 and is shorter than the select period in the 2001 VBT and 2008 VBT

What new data is available?

- ILEC has released new reports with experience data covering through 2013 policy anniversaries

- More data has become available because of VM-51 reporting and through processing via a designated statistical agent (MIB)

- The data is now available to you at the SOA website
  - https://www.soa.org/research/opportunities/2018-data-analysis-contest/
  - Crowdsourcing contest underway (September 1 – October 31)
  - You can look for patterns, variables, factors impacting mortality
  - Large file: 10 GB unzipped, 30 million records

What new data is available?

Study/Table	Exposure		Actual # Claims	Companies
	By Amount	Policy-Years	By Number	By Number
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2002-2009 / 2015 VBT	$31 trillion	266 million	2.6 million	51
2009-2015	**$71 trillion**	**352 million**	**3.4 million** **$179 billion**	**96**
2009-2015 Gender<>U IY>=1980, Face>=100K	$66 trillion	165 million	383 thousand $131 billion	96

What new data is available?

- Variable Fields
  - Observation Year
  - Common Company Indicator (contributed at least 5 of 7 years)
  - Gender
  - Preferred/Smoker/Risk Class
  - Plan
  - Issue Age
  - Duration
  - Attained Age

  - Age Basis
  - Face Amount Band
  - Issue Year
  - Level Term Period
    - Anticipated
    - Guaranteed
  - Post-Level Indicator
  - Select/Ultimate Indicator

Current and Future ILEC Project Work

- Quintile Information
  - Results by Quintile Company Groups
- Large Face Amount Analysis
  - $1M and higher
- Lapse/Mortality Analysis
  - Evaluate interaction of decrements
- Statistical Outliers
- Older Age
- Cause of Death
- Substandard
- Juvenile

Society of Actuaries — 2019 Life & Annuity Symposium

Total experience

Q: How much data for 2009-15?
A: So much data: but slim in pockets

	Exposure (Bil $-Yrs)	Exposure, Policy-Yrs (M)	Claims ($Bil)	Claims Policies (M)
Full dataset	71,095	352.5	179	3.4
Adult issues	68,447	282.2	177	3.2
Adult issues, face>$25k	67,899	222.6	162	1.0

Adult issues. Actual/2015VBT. bv Amount

All adult-issue experience
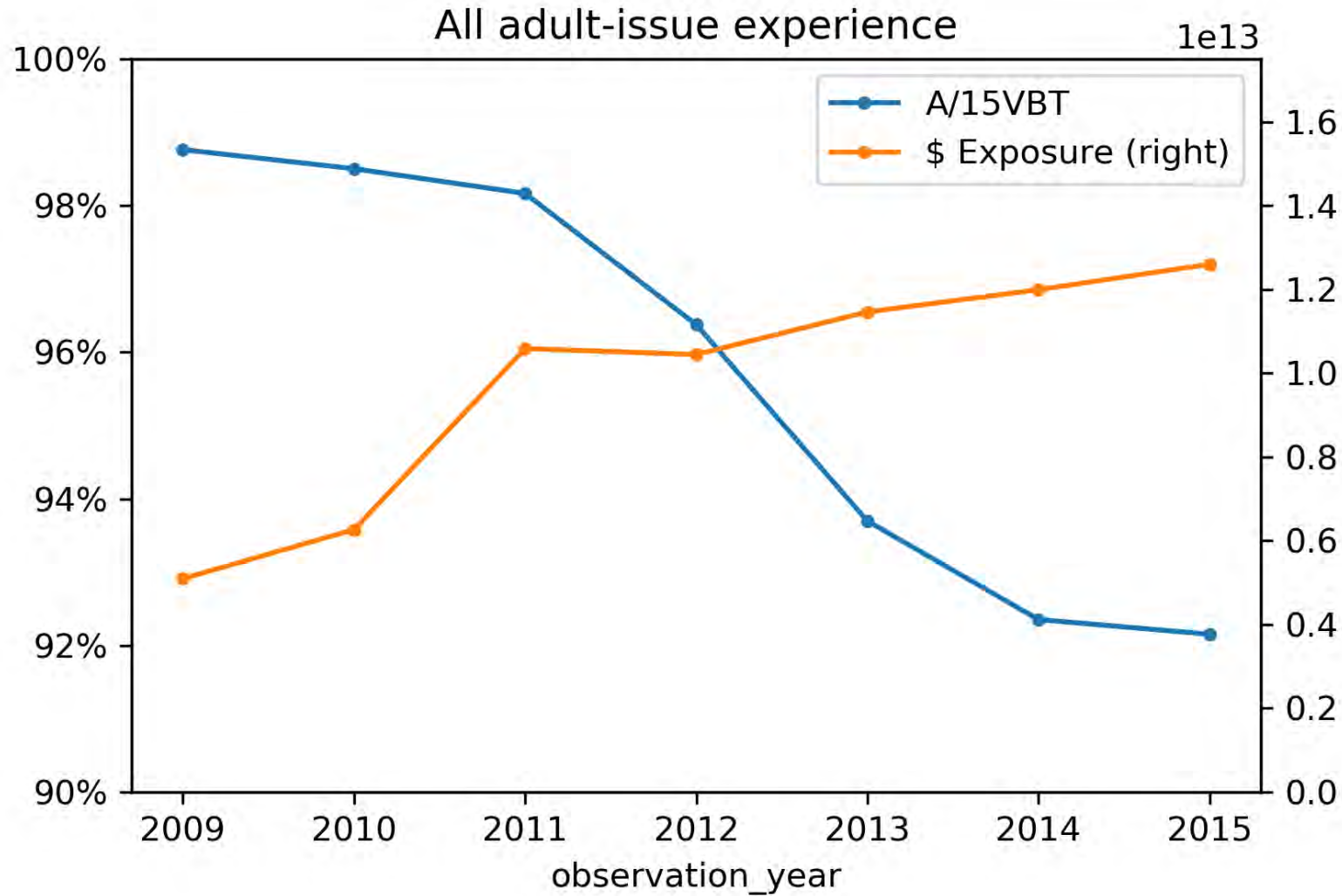
Drop vs 15VBT has flattened out

Rollforwards across study years

Rollforwards between years

Work in development to identify sources of change:

Did business mix just move? Did actual rates cause movement?
Adult issues only, all face amounts, by face amount (not count)
Steps:
Start with A / 15VBT for one year
1. Update A/15VBT: *next year's actual rates weighted with this year's exposure*
2. Update 15 VBT expecteds: *if 1st step: this year's rates weighted with next year's expos.*
… then you have A/15VBT for the next study year
Could swap steps 2, 3 and get a different allocation.
Level of aggregation matters: here: by smoker, iss. age, duration, sex, plan, PLT indicator.

$$\frac{\sum_c Claims_{y,c}}{\sum_c VBT15_{y,c}} = \frac{\sum_c \frac{Claims_{y,c}}{VBT15_{y,c}} VBT15_{y,c}}{\sum_c VBT15_{y,c}} \Rightarrow \boxed{\frac{\sum_c \frac{Claims_{y+1,c}}{VBT15_{y+1,c}} VBT15_{y,c}}{\sum_c VBT15_{y,c}}} \Rightarrow \boxed{\frac{\sum_c \frac{Claims_{y+1,c}}{VBT15_{y+1,c}} VBT15_{y+1,c}}{\sum_c VBT15_{y+1,c}}} = \frac{\sum_c Claims_{y+1,c}}{\sum_c VBT15_{y+1,c}}$$

Rollforward: All business

All adult issues
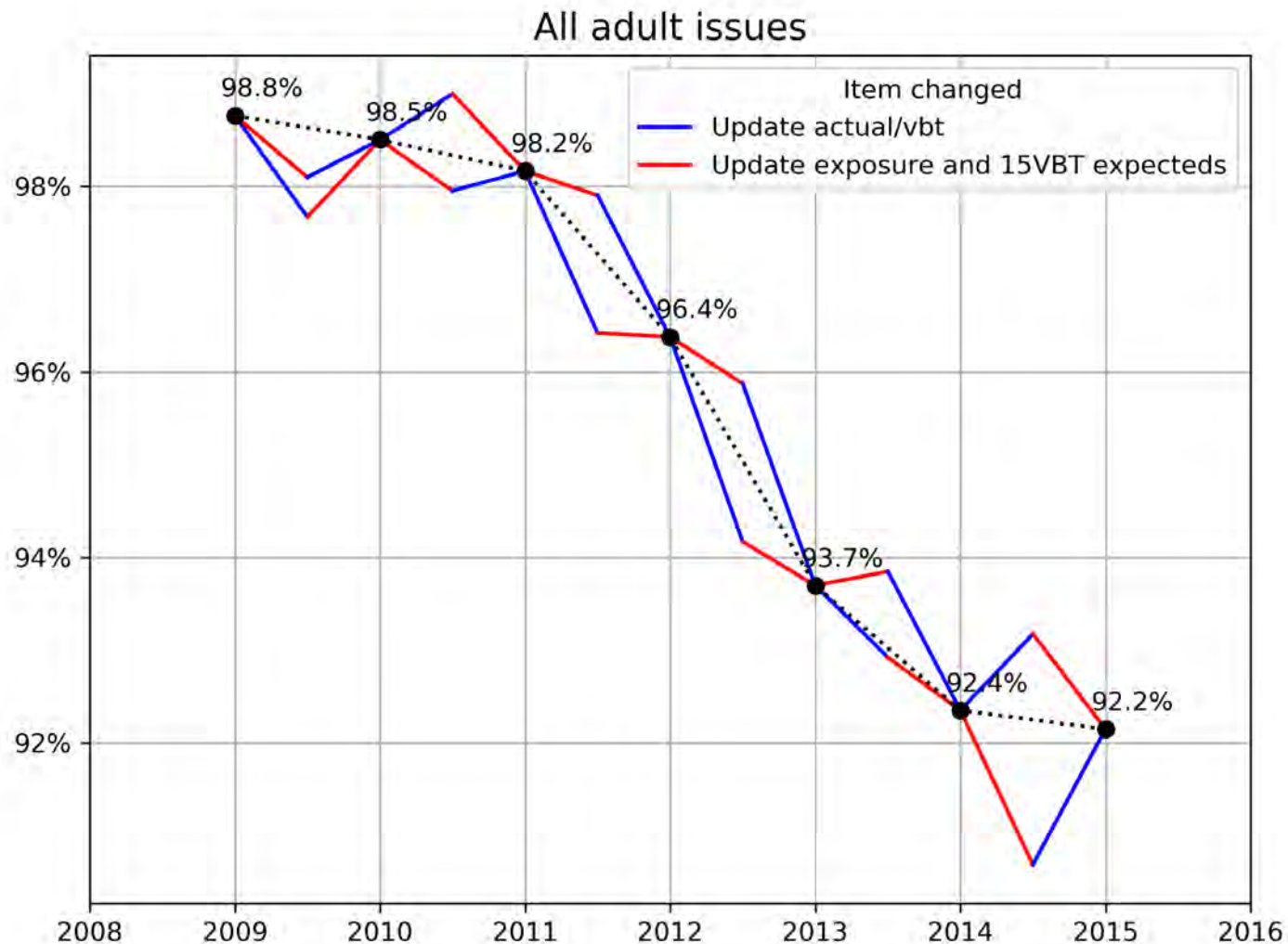
From 2009-2010 big changes in mix lead to odd results.

In 2015 (from 2014 study to 2015 study) the A/15VBT went up, had been going down.

Explanations for 2014-5?
- Slower mortality improvement?
- Changed company mix?

Rollforward: Perm
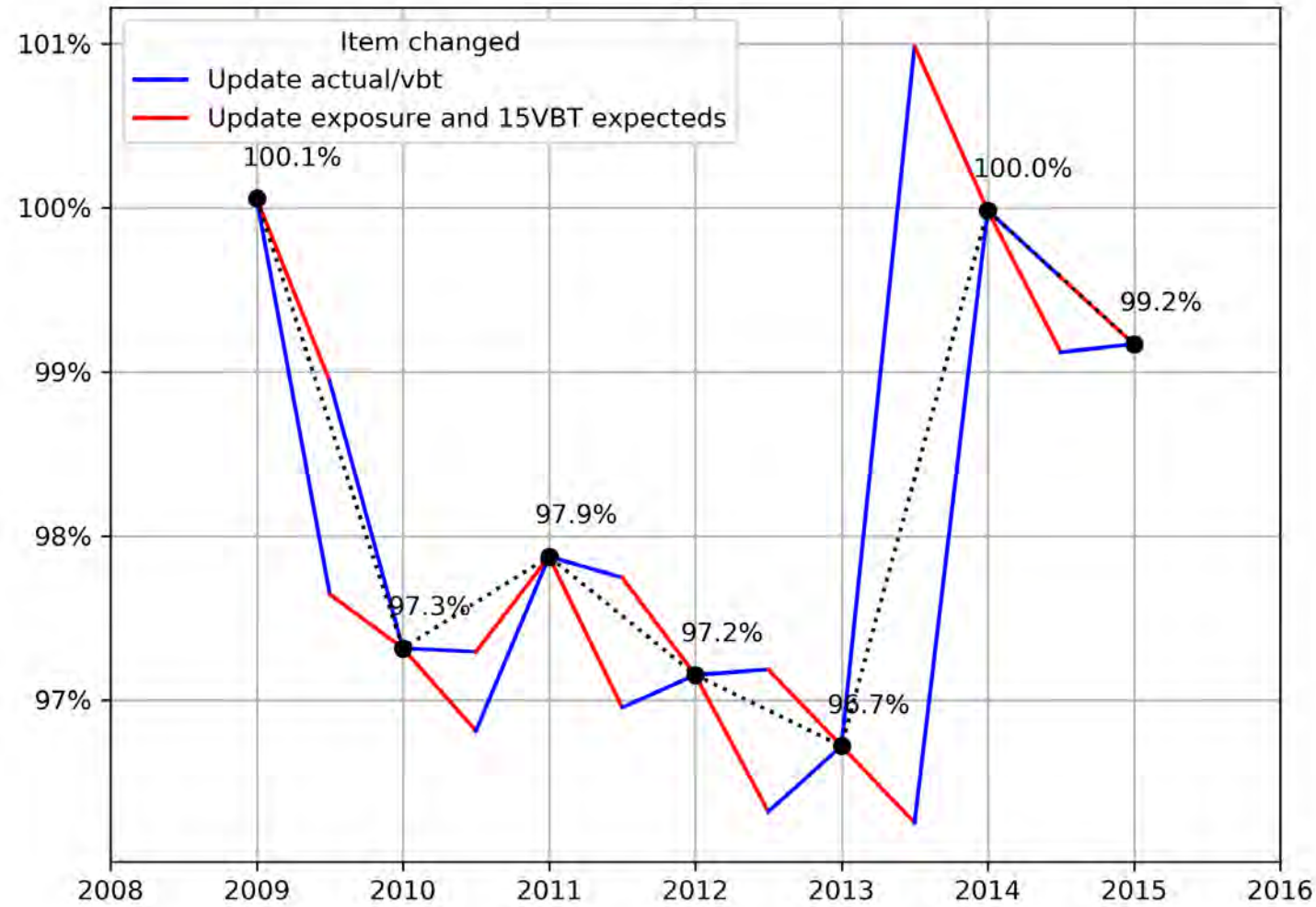
Rollforward: Term
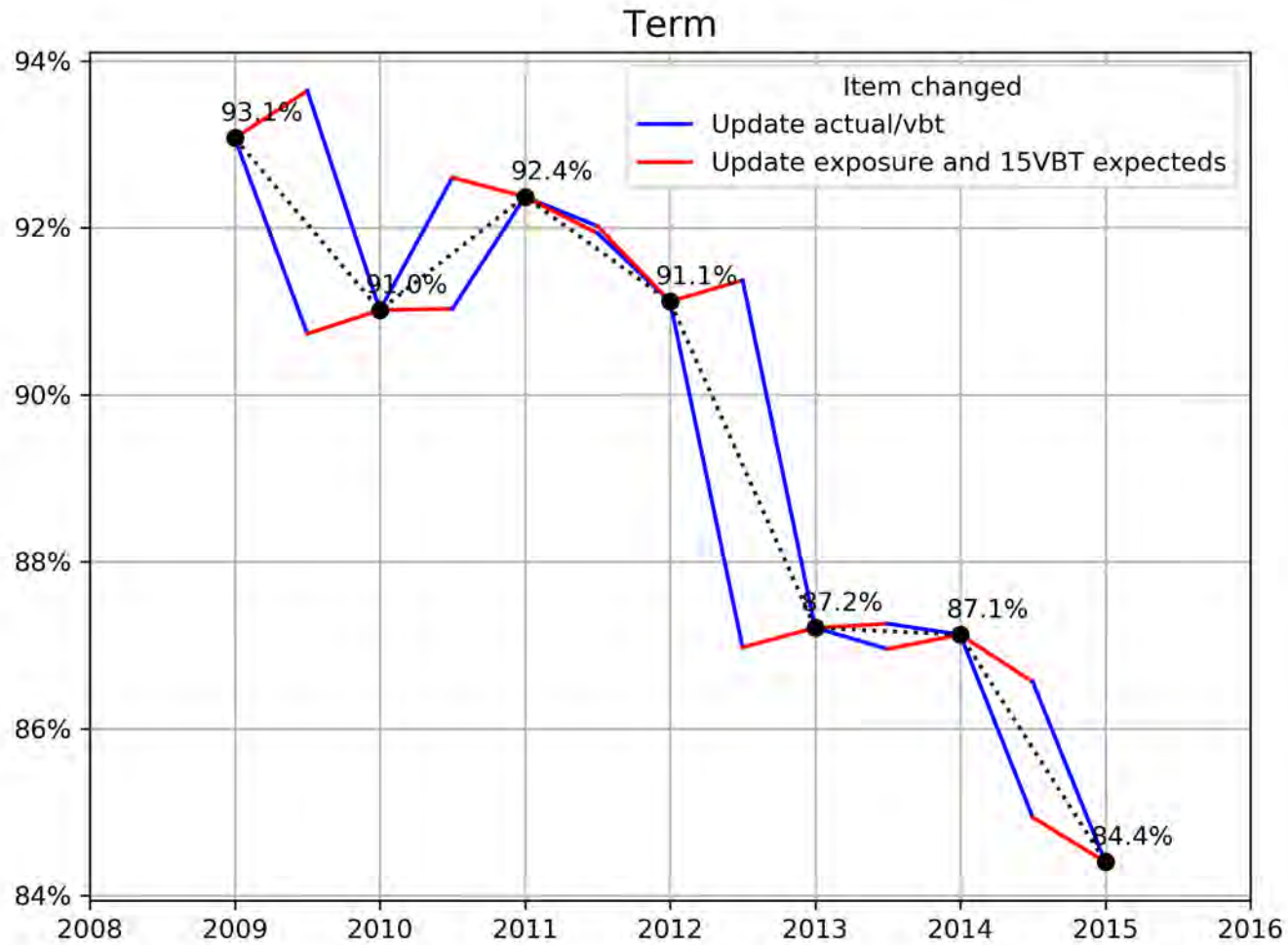
Rollforward: UL
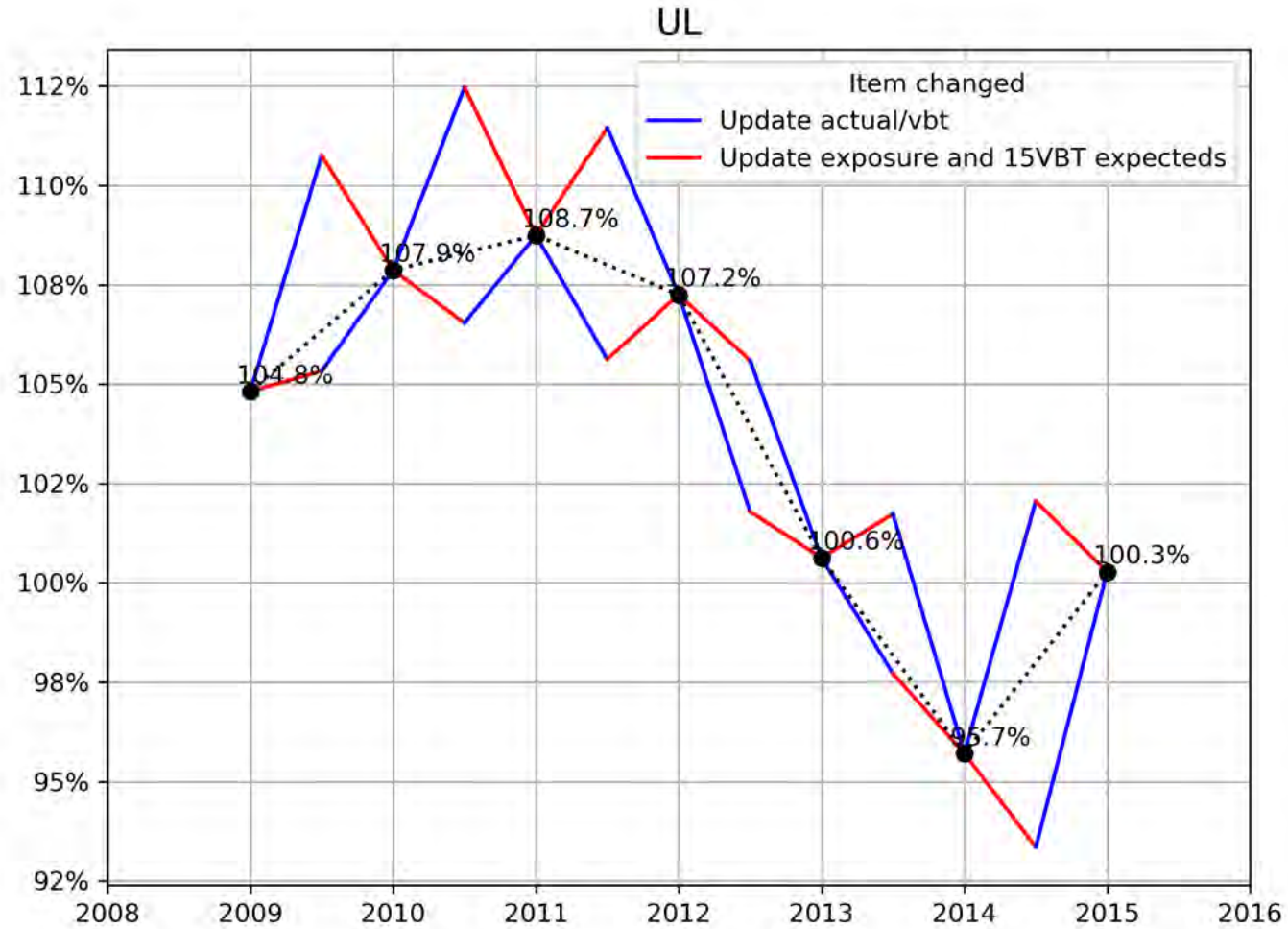
Rollforward: ULSG
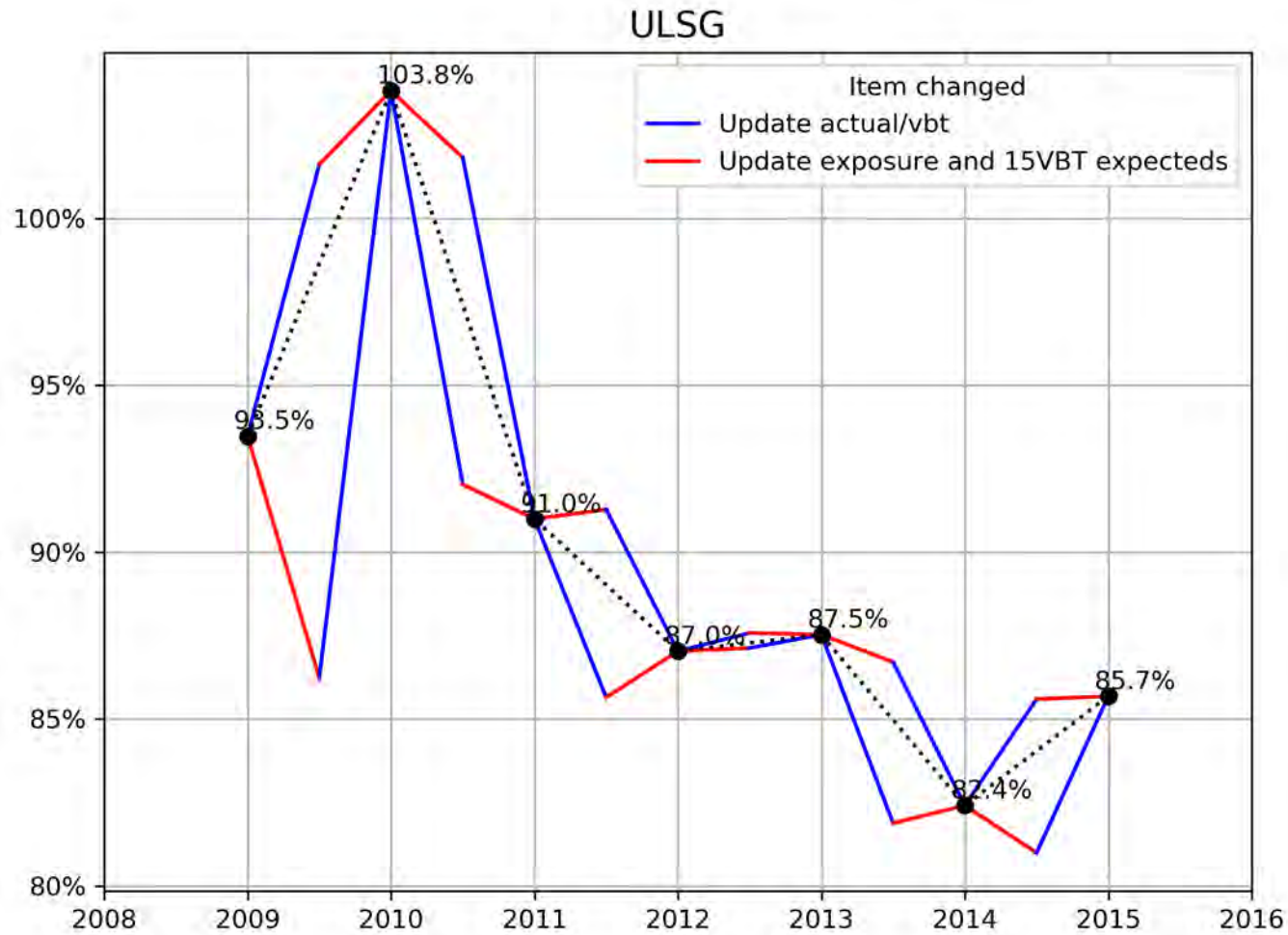
Rollforward: VL
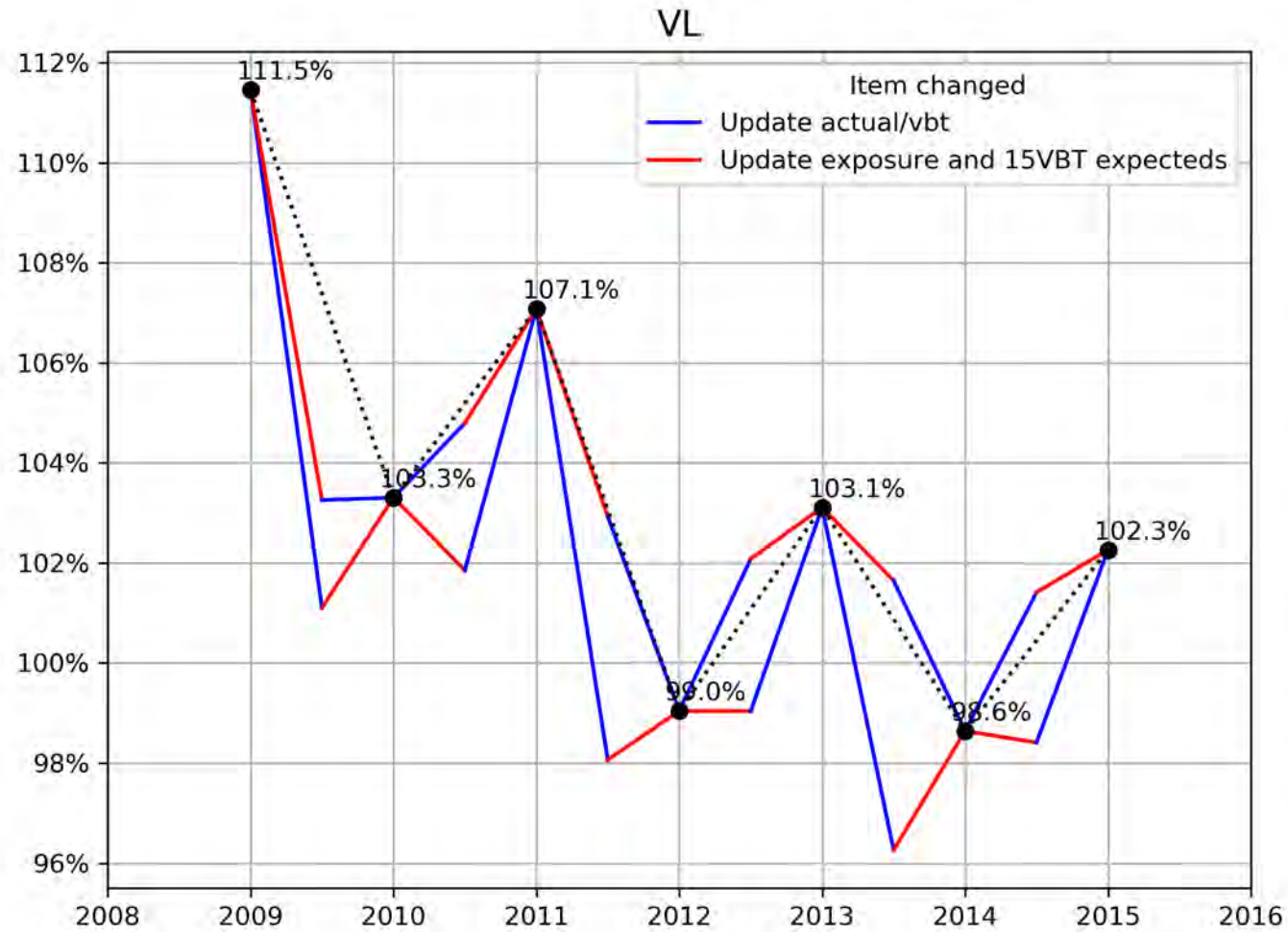
Rollforward: VLSG
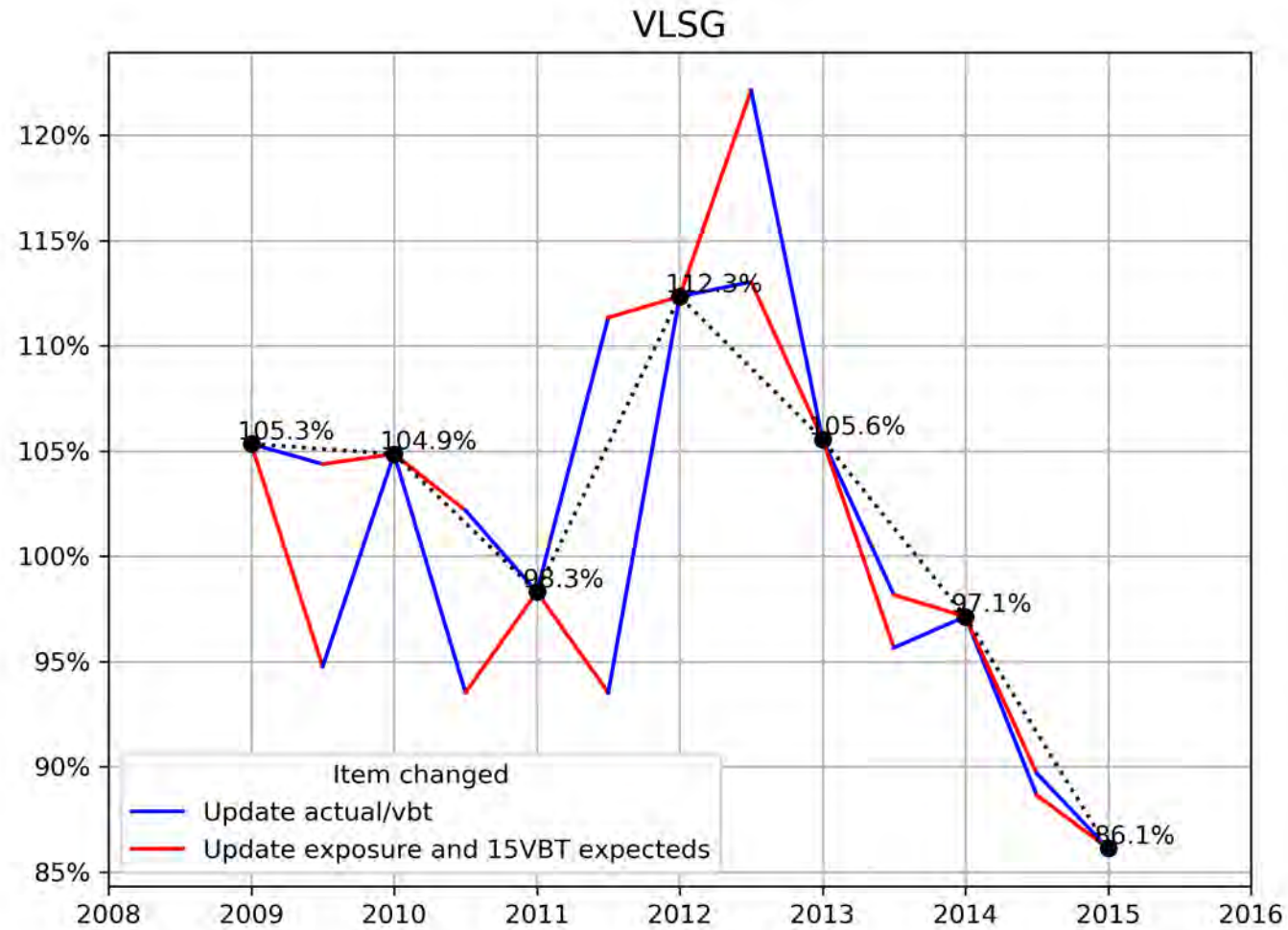
Study year movements across categories: all data

Gender
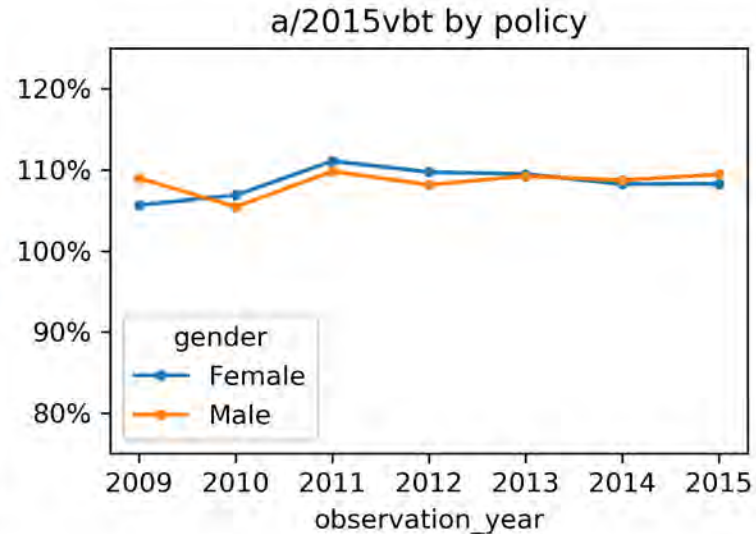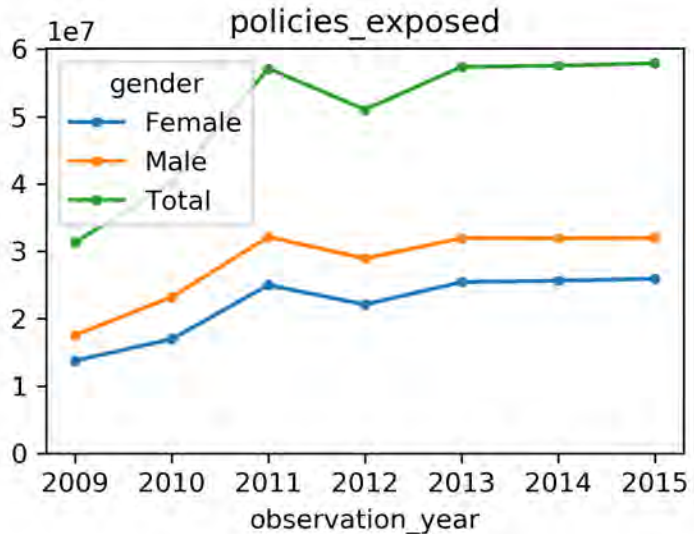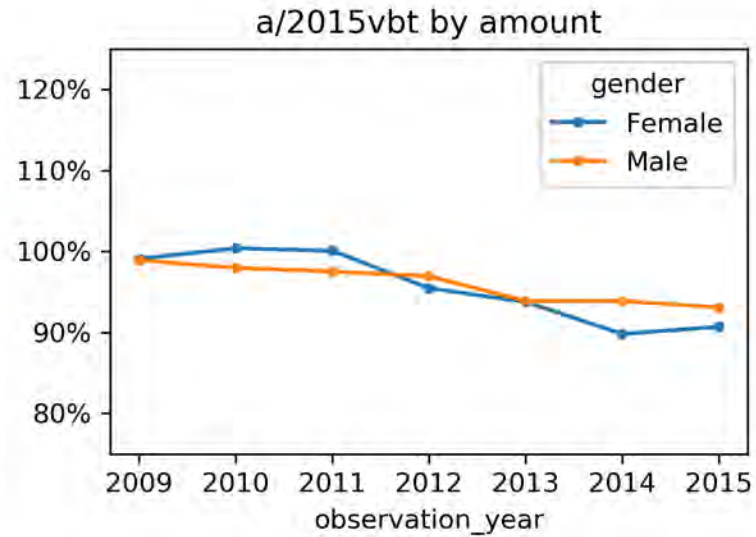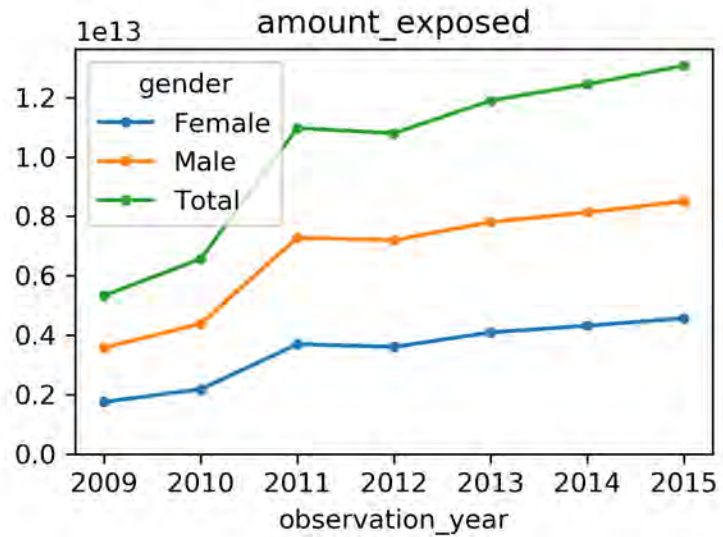
Smoker
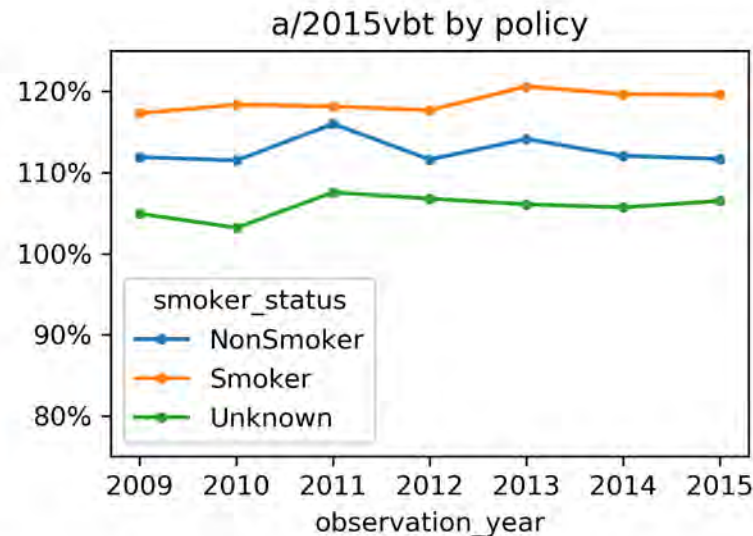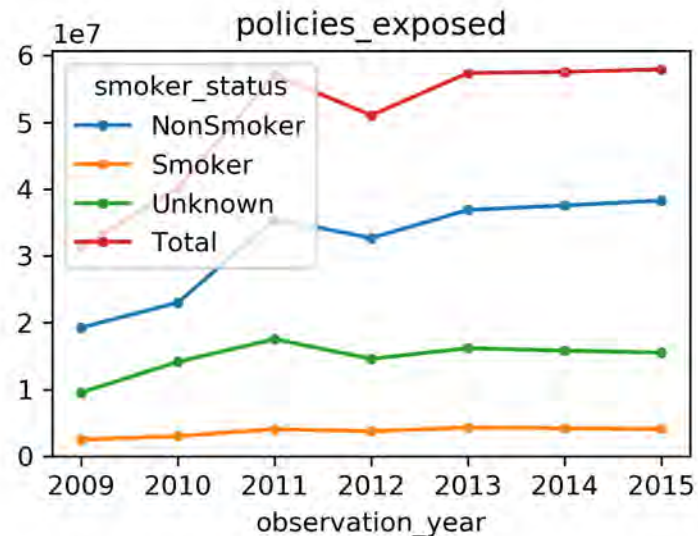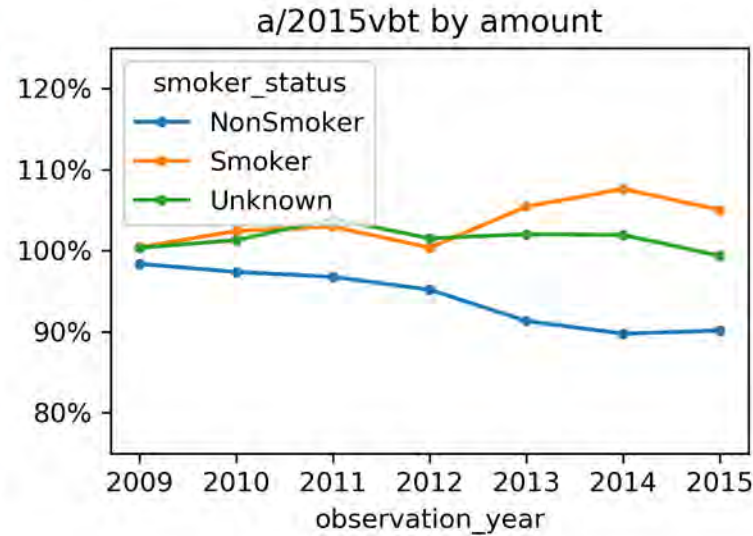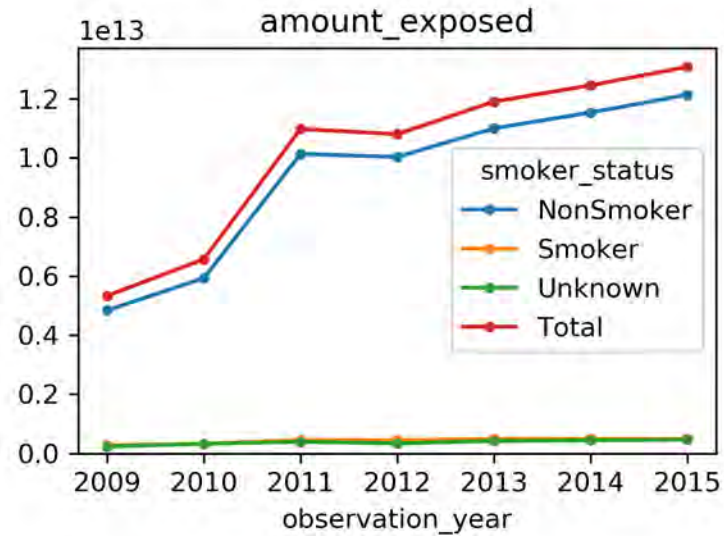
Preferred indicator
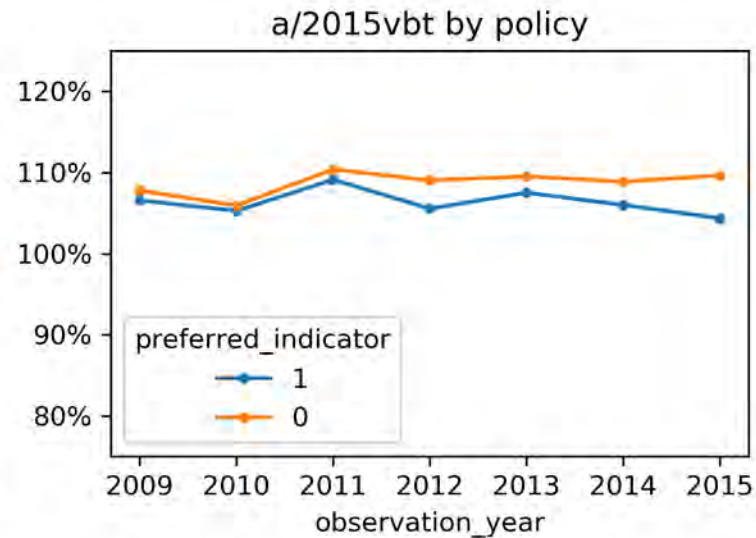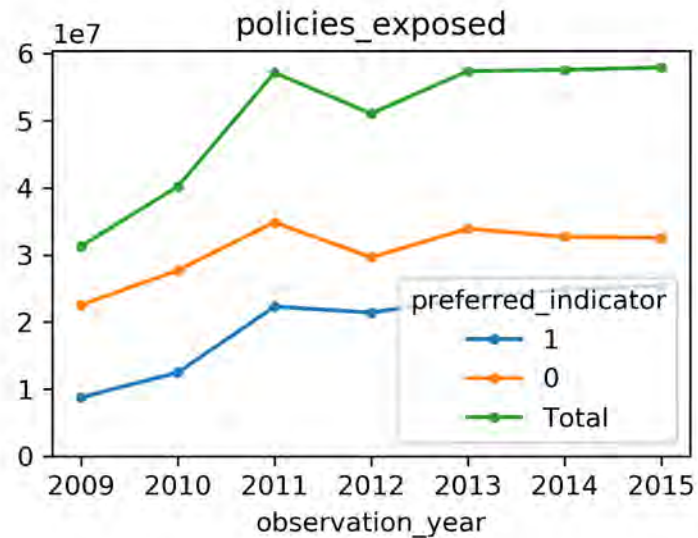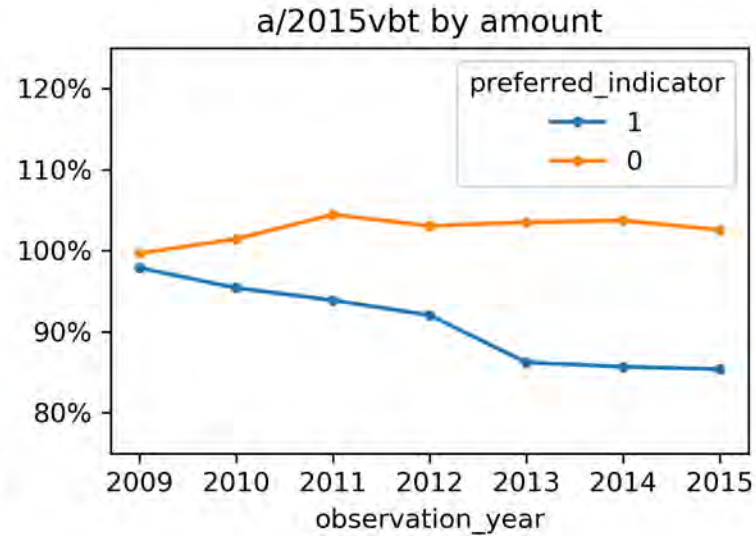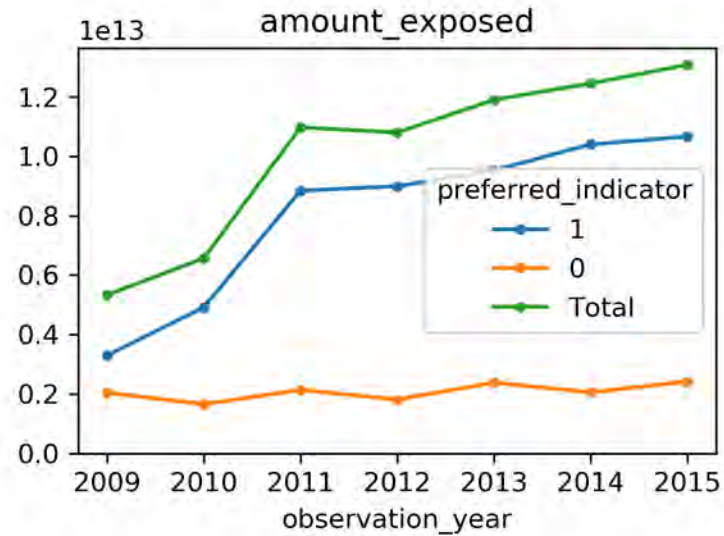
Common company indicator
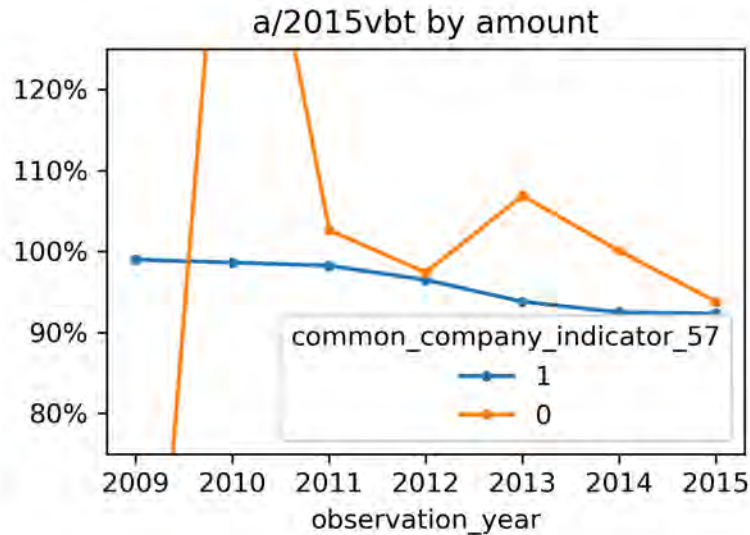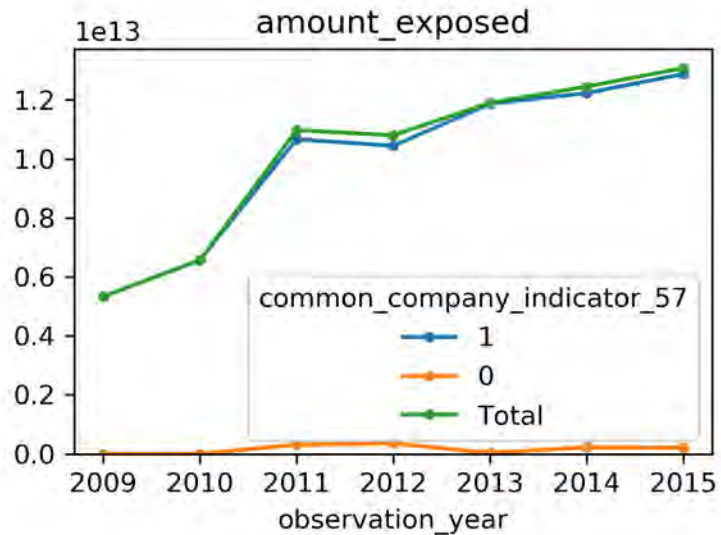
"Uncommon" companies have different trends by amount and count: don't explain A/15VBT flattening by amount
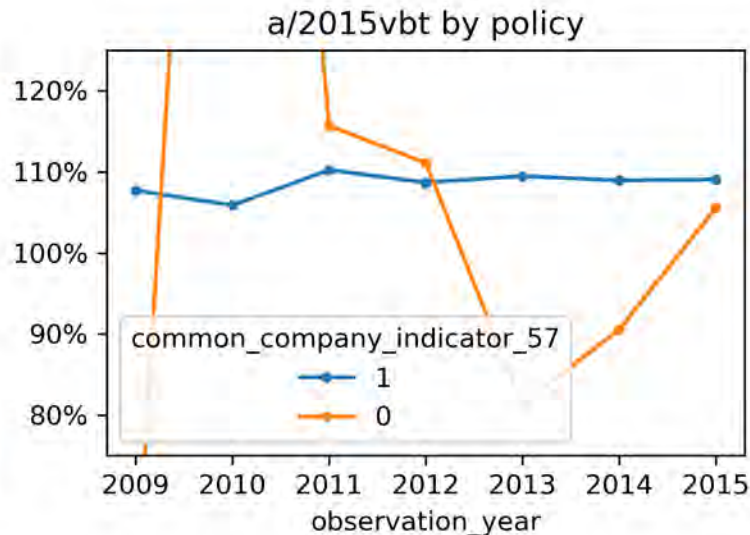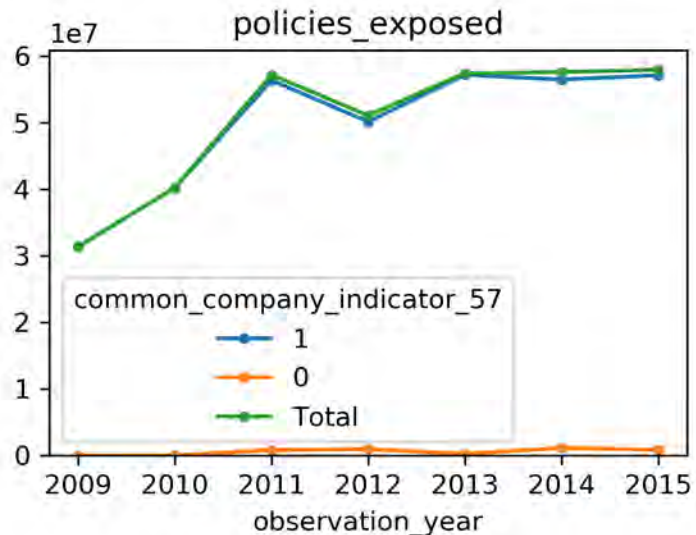
Number of preferred classes
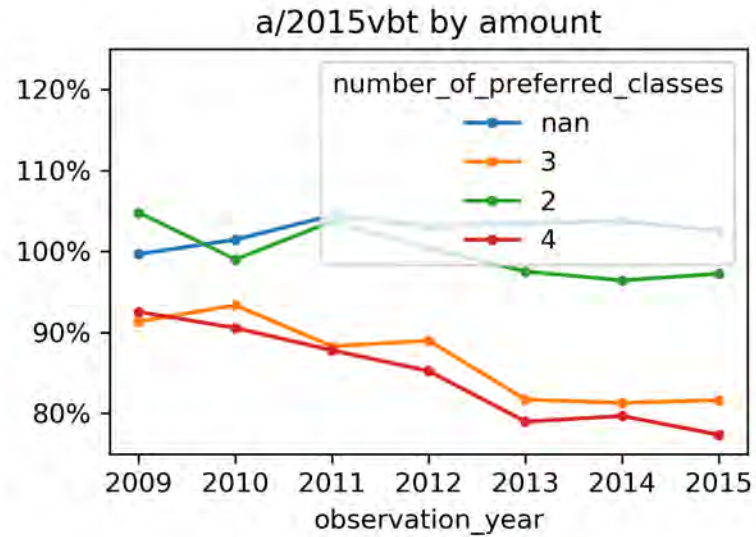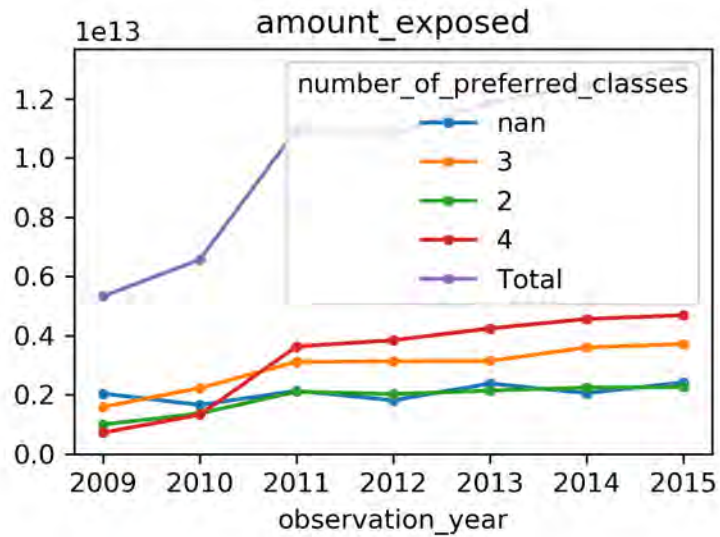
Is really number of classes. n/a: no preferred
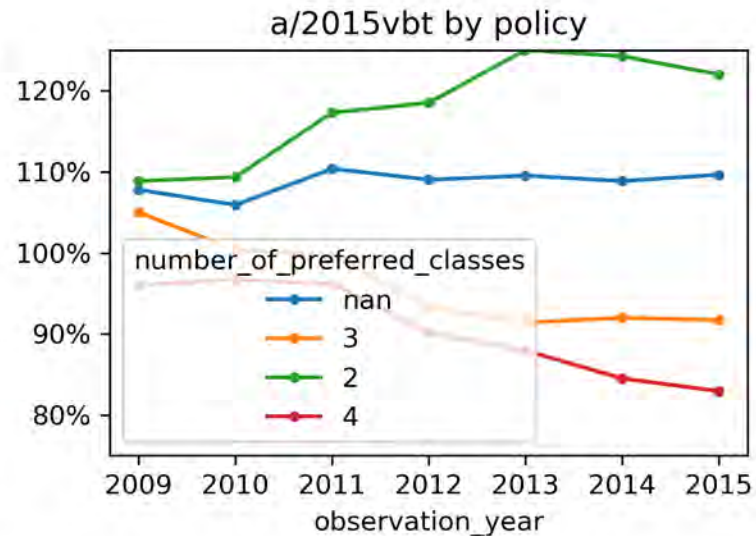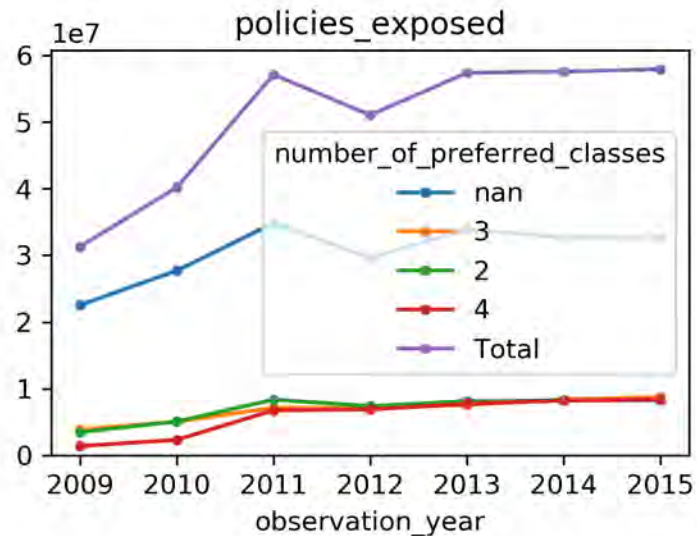
Issue age (quinquennial bands)
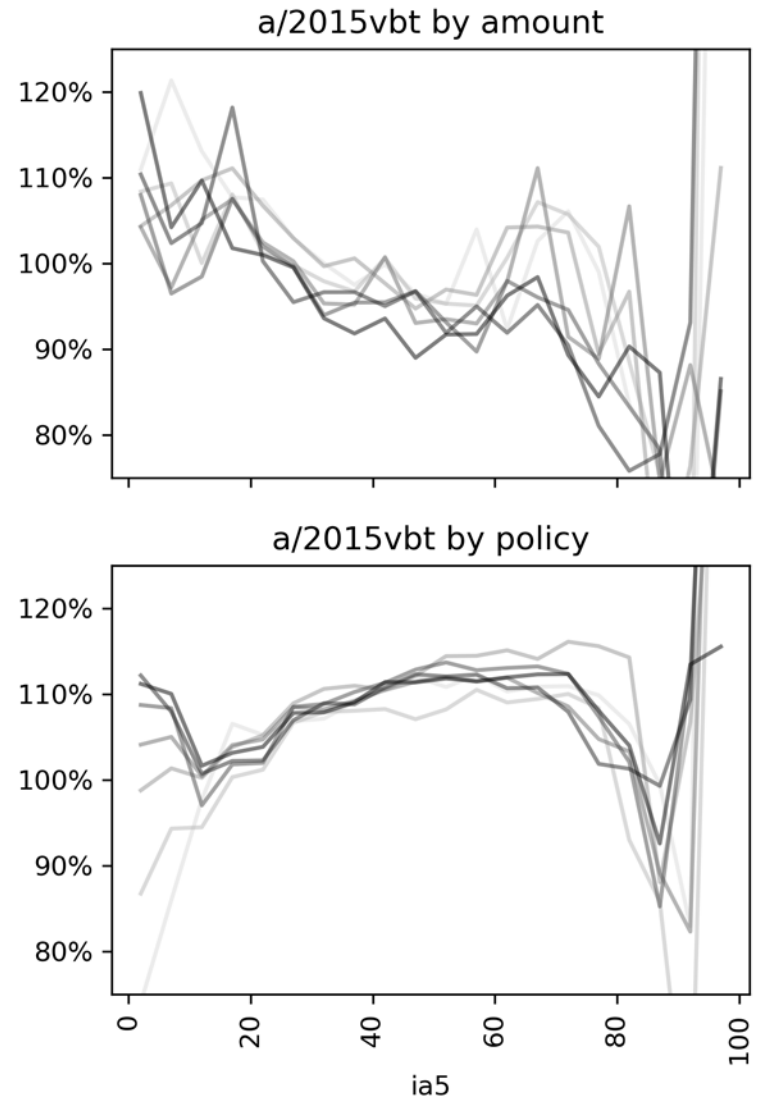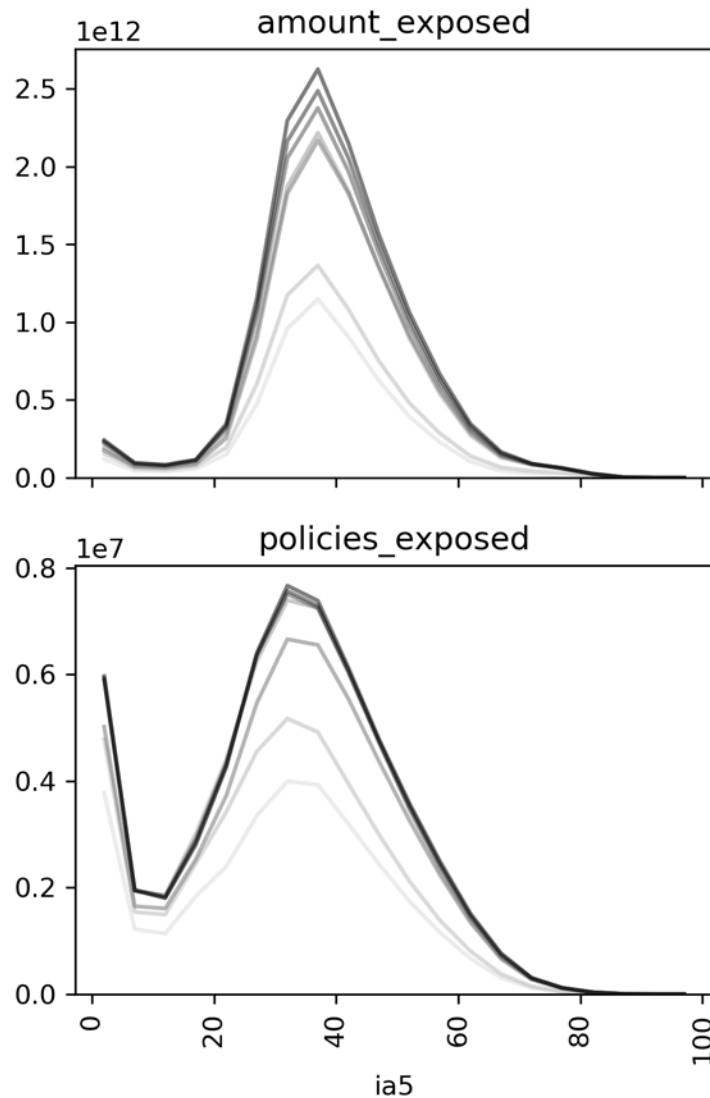
In these graphs:

Lightest: 2009
Darkest: 2015

Falling by amount with respect to issue age vs 15VBT, but issue ages in 60s bump up

Attained age (quinquennial bands)
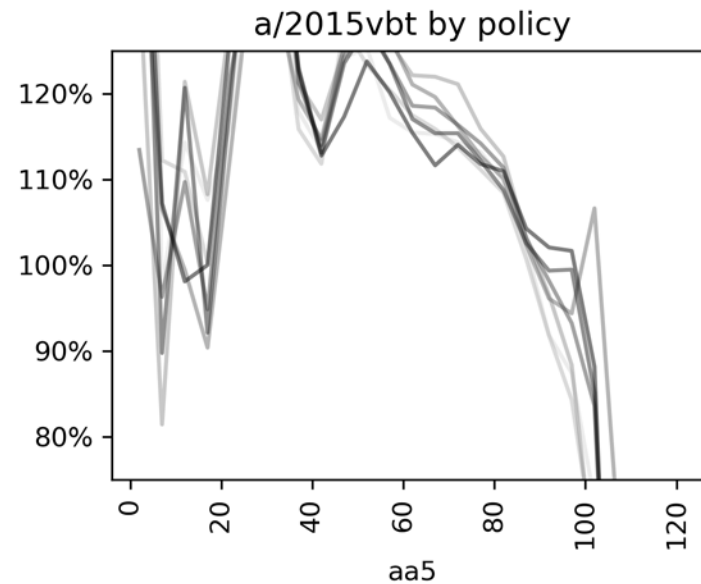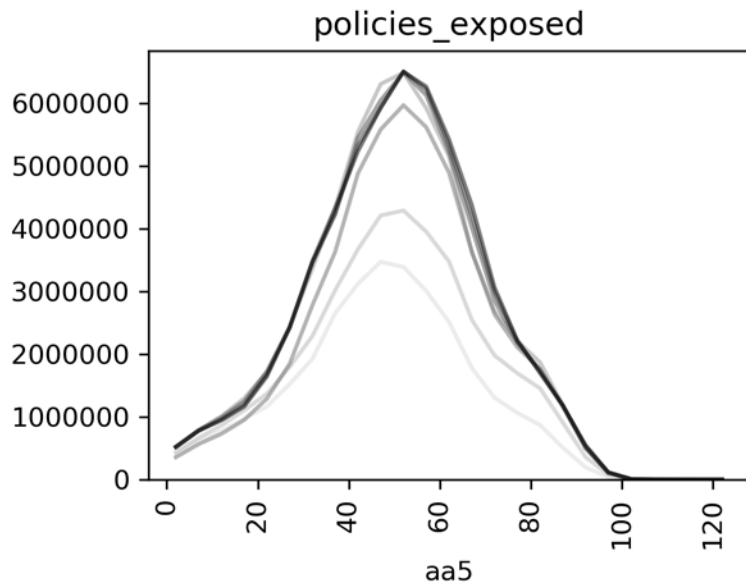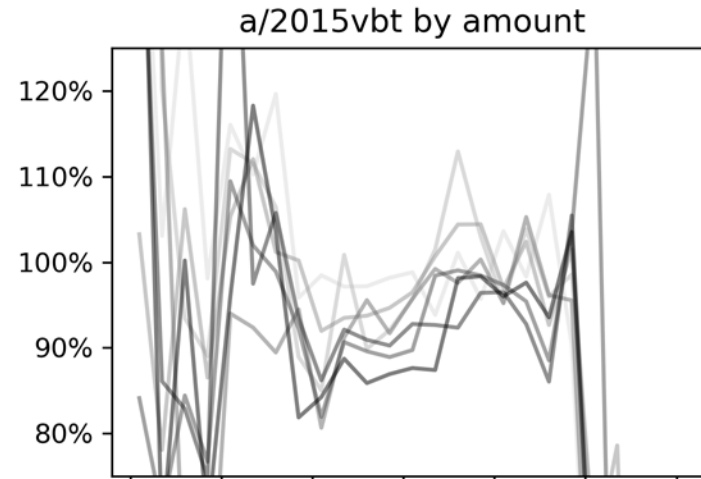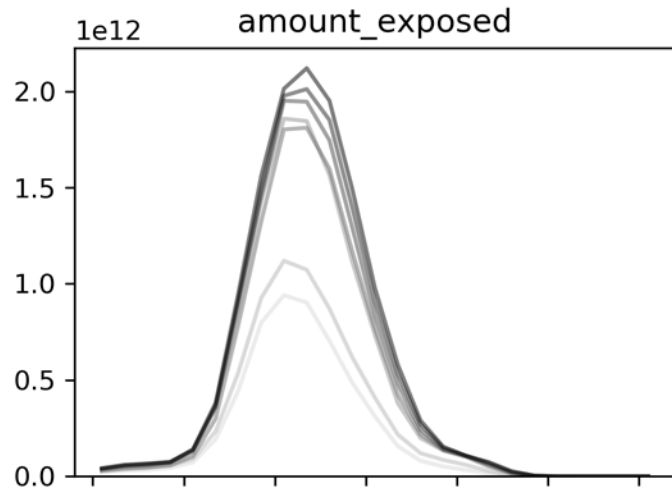
From late 20s generally increasing vs 2015VBT

More recent study years generally lower

Face amount band
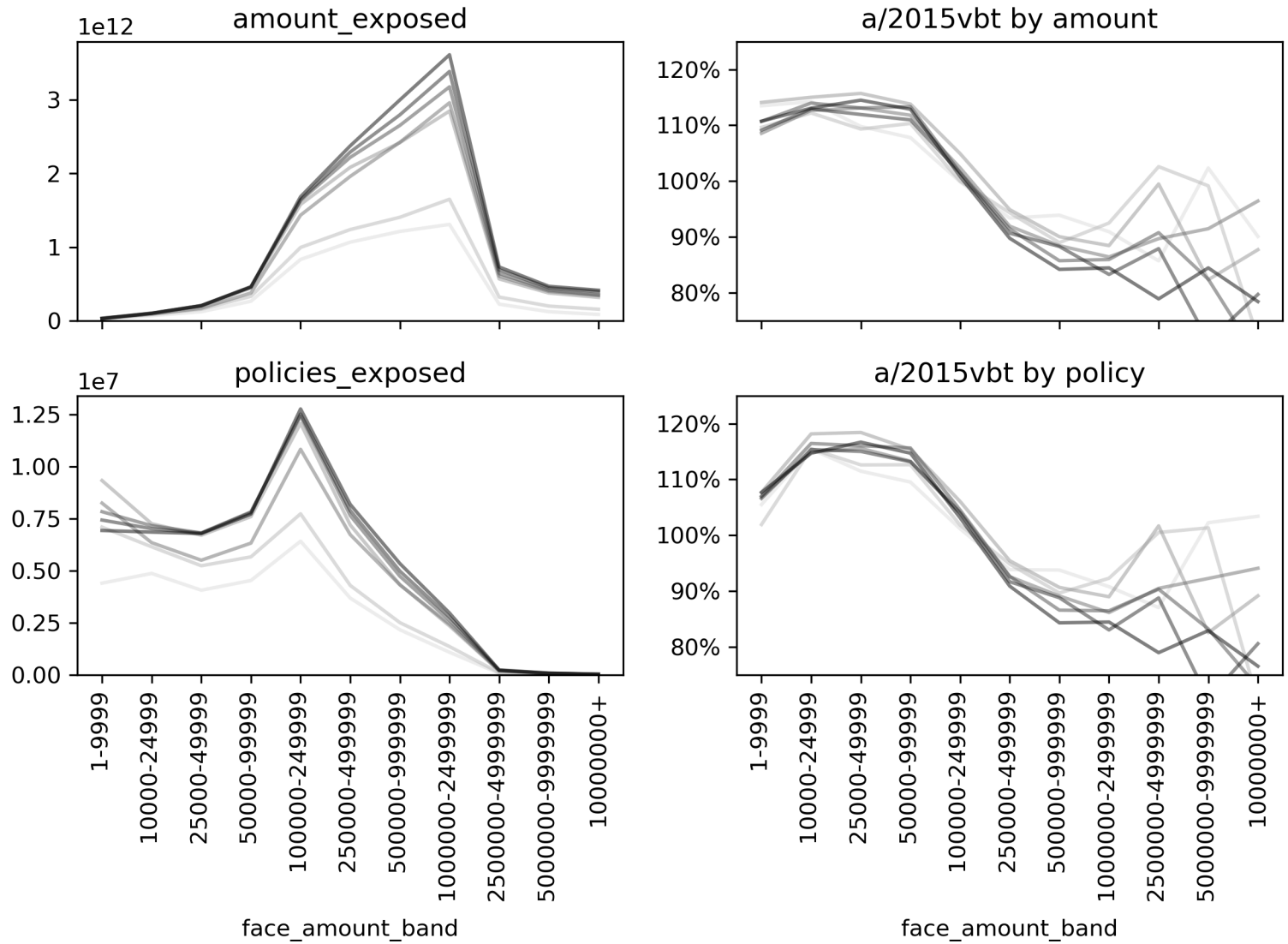
In 25000-99999 A/15VBT has crept up, volatility is high in higher amounts as would think

Insurance plan
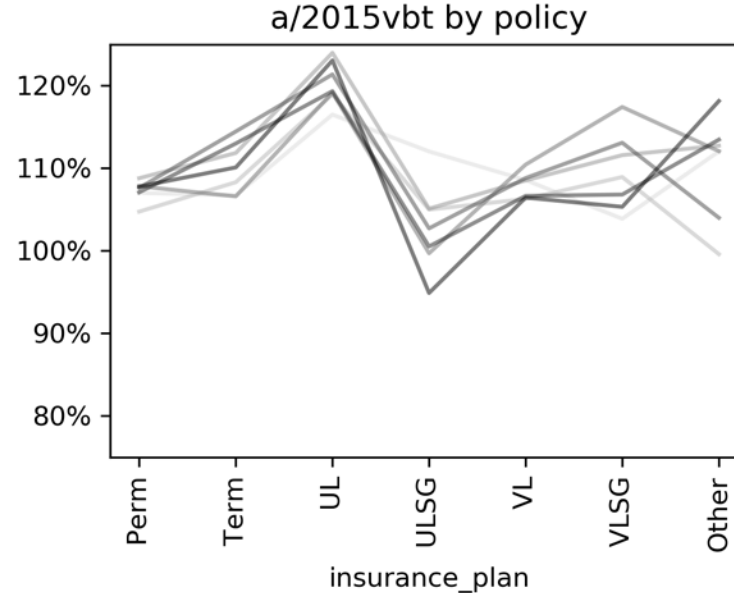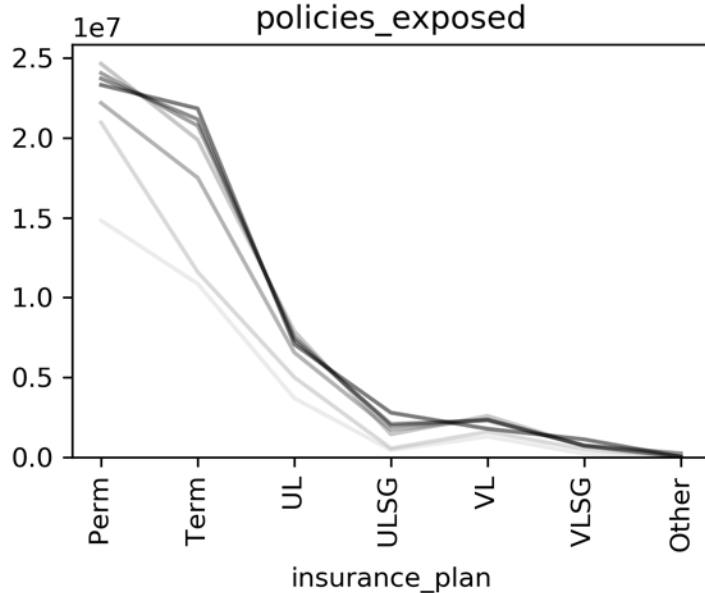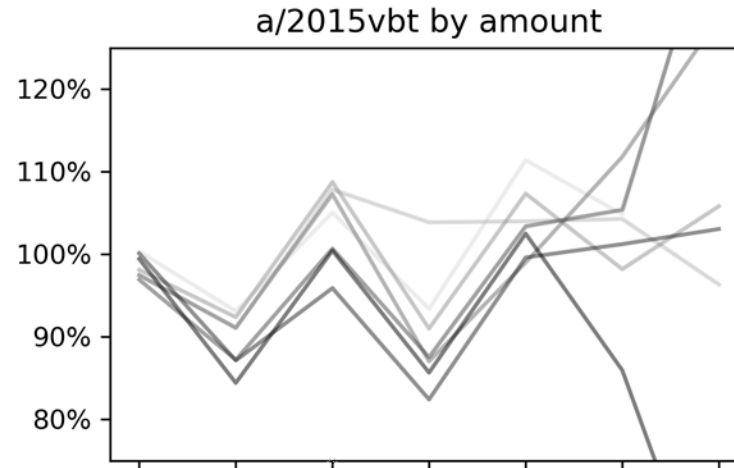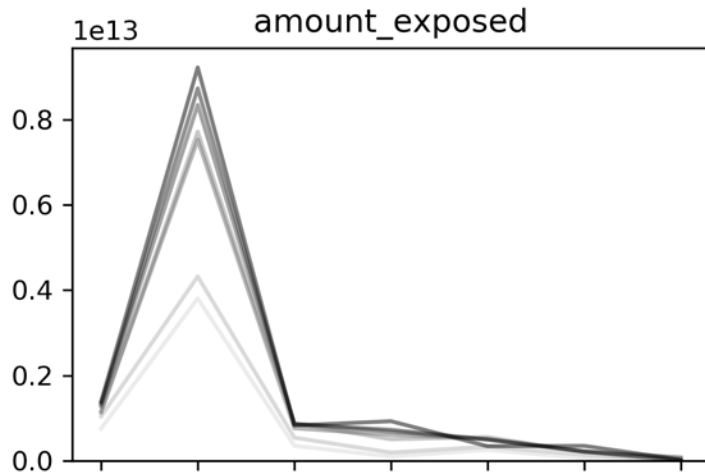
Generally lower by amount in recent years, Perm is an exception;

2015 uptick UL, ULSG, VL

Products by study year by face amount
Adult issues
Each product by
Face
Issue age band
Duration

All plans

All plans
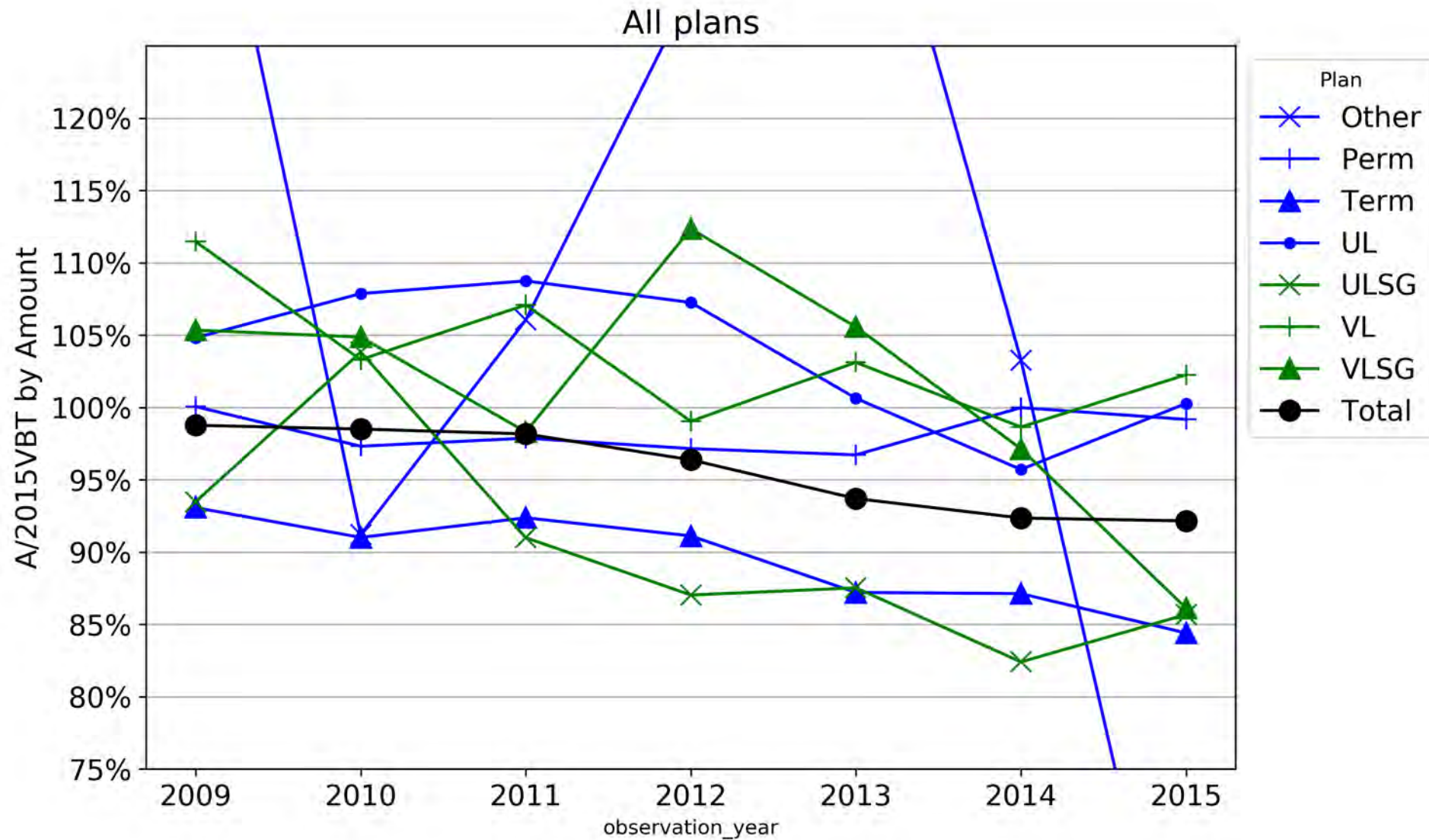
Permanent by face
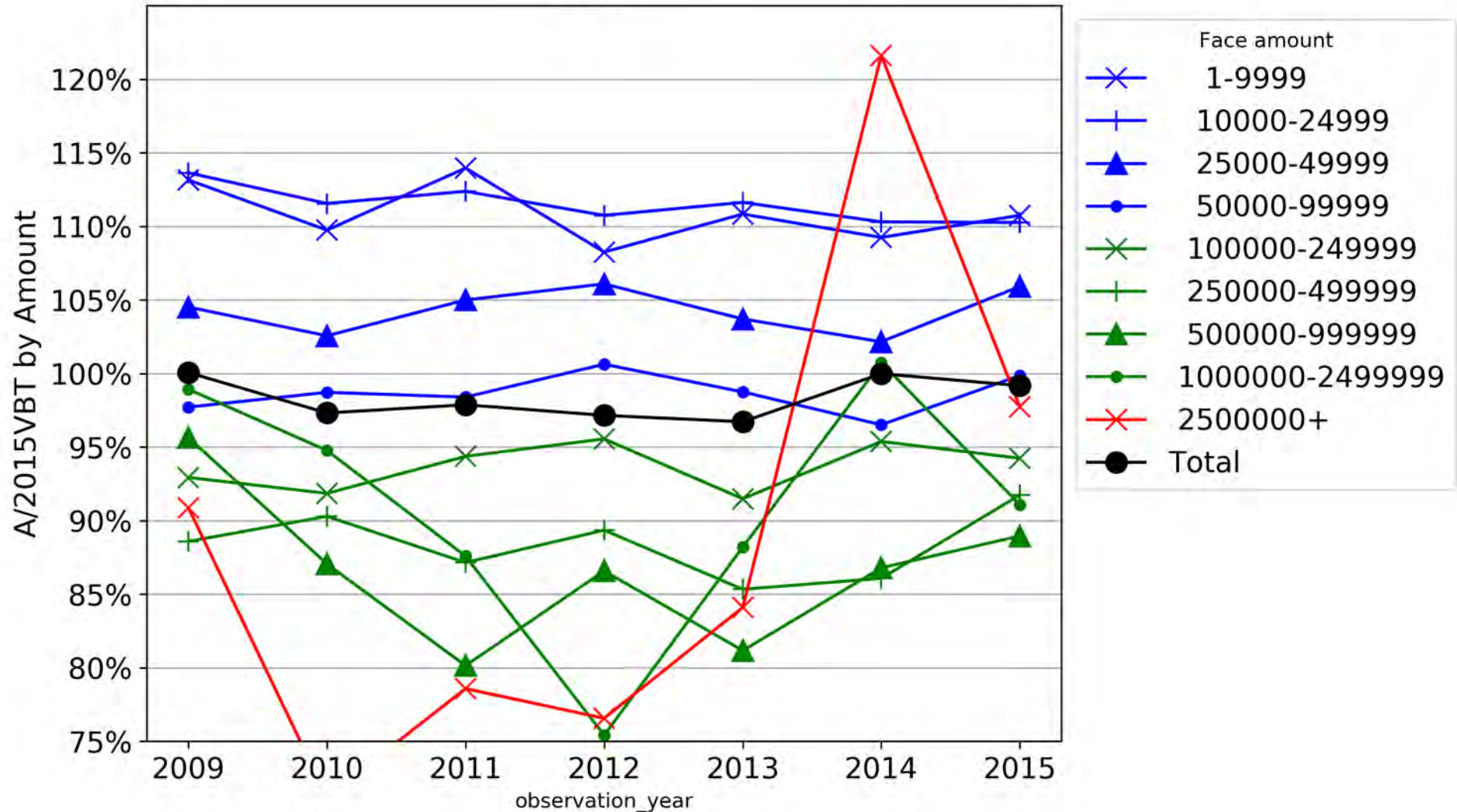
Permanent by issue age
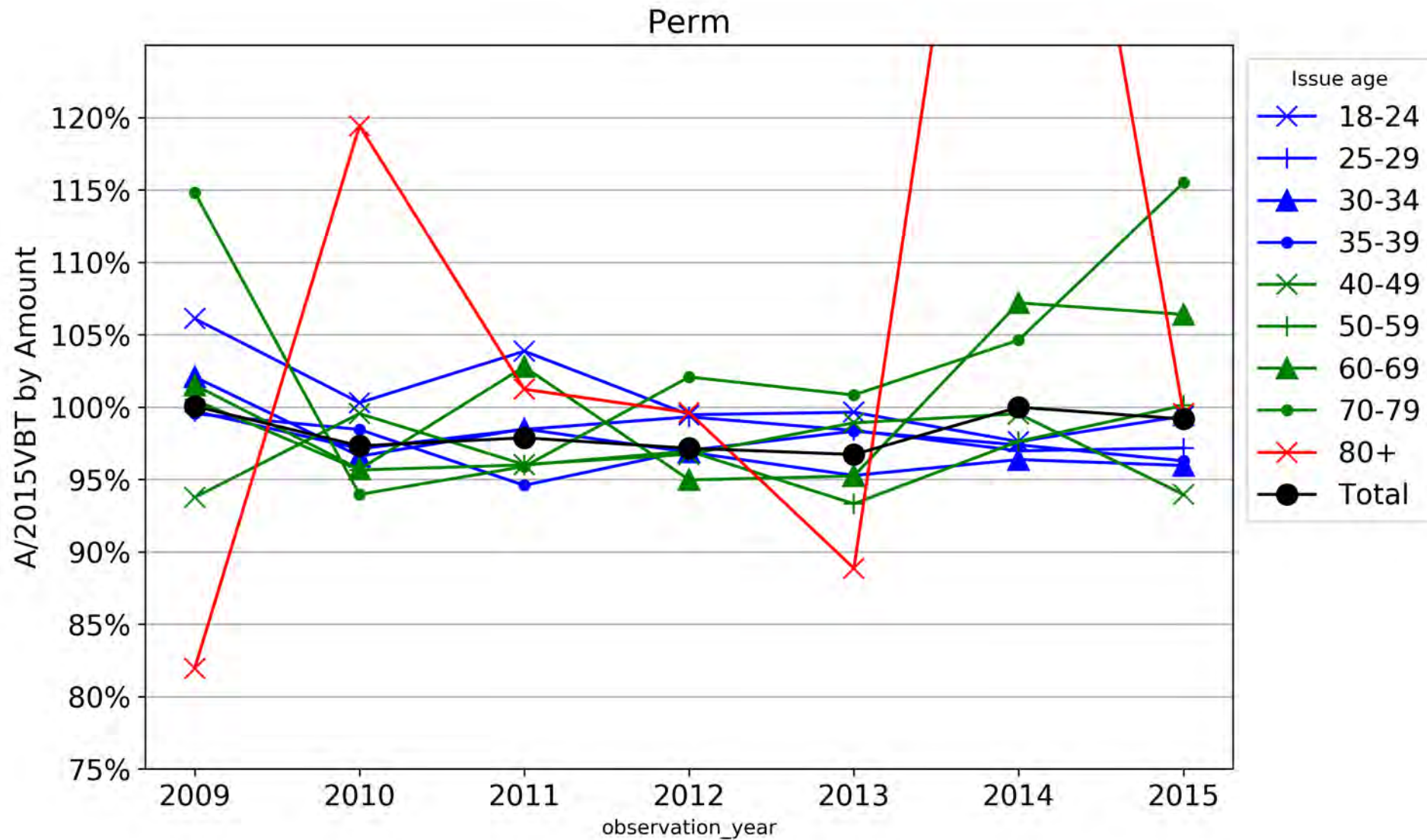
Permanent by duration

Perm
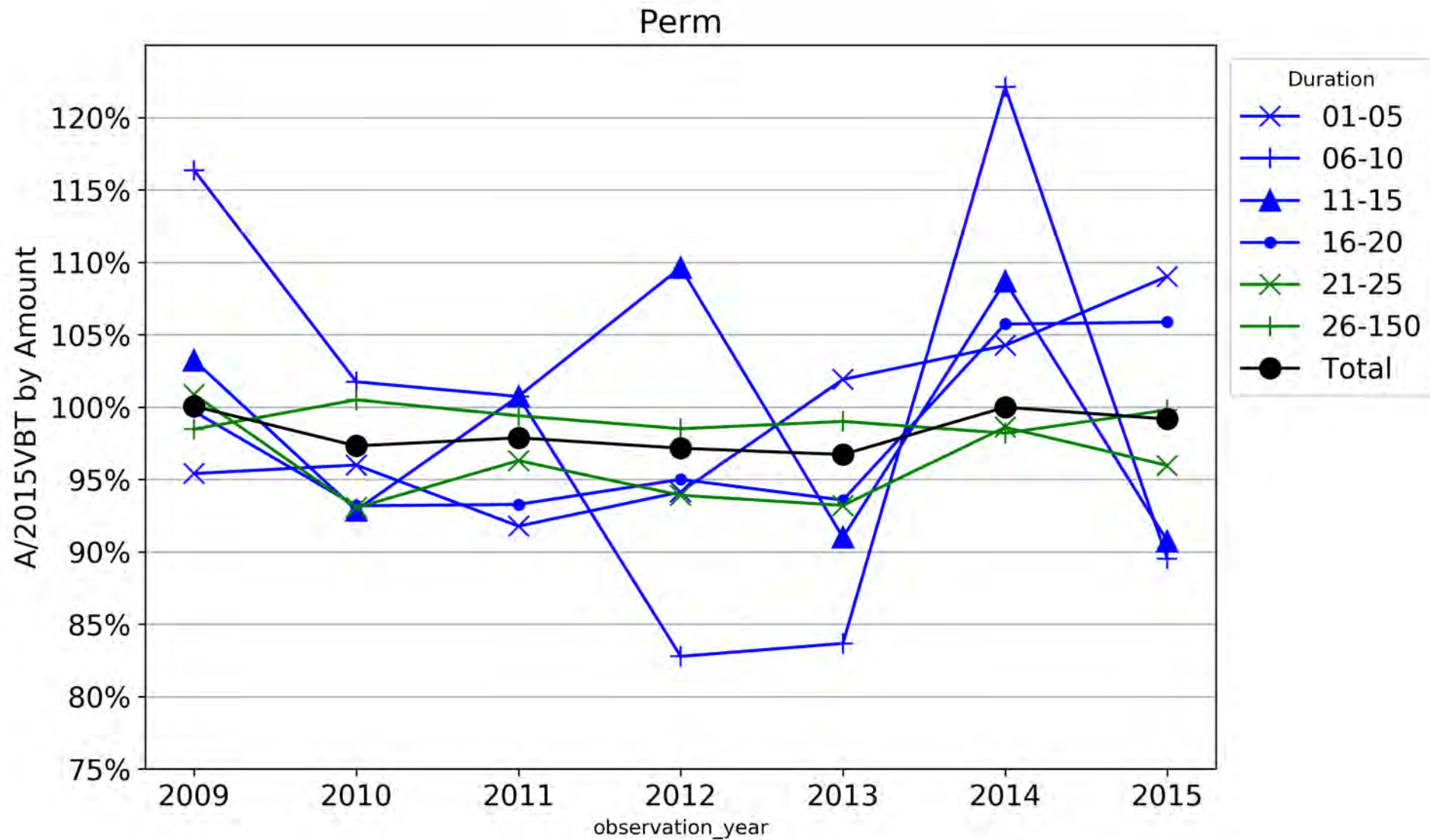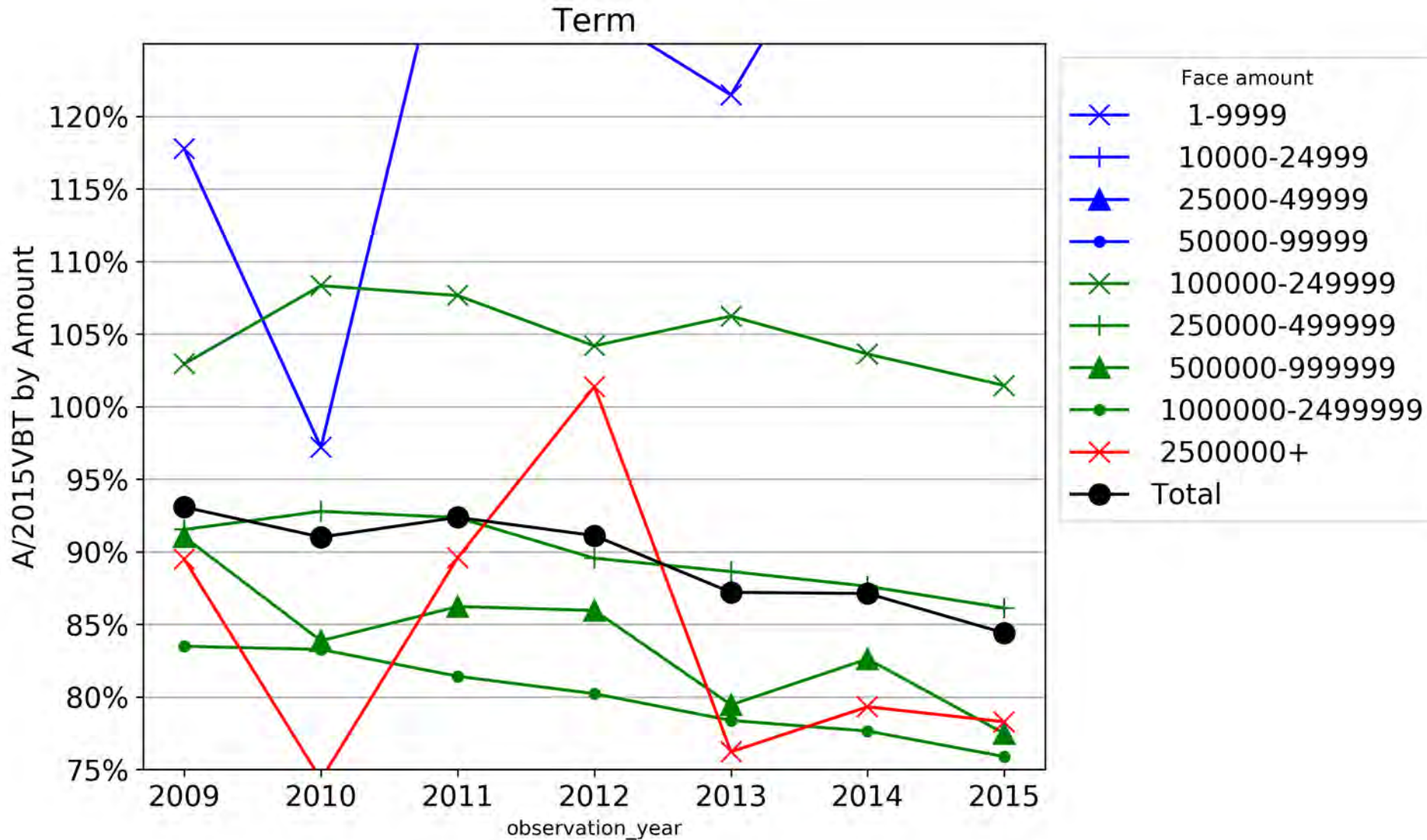
Term by face

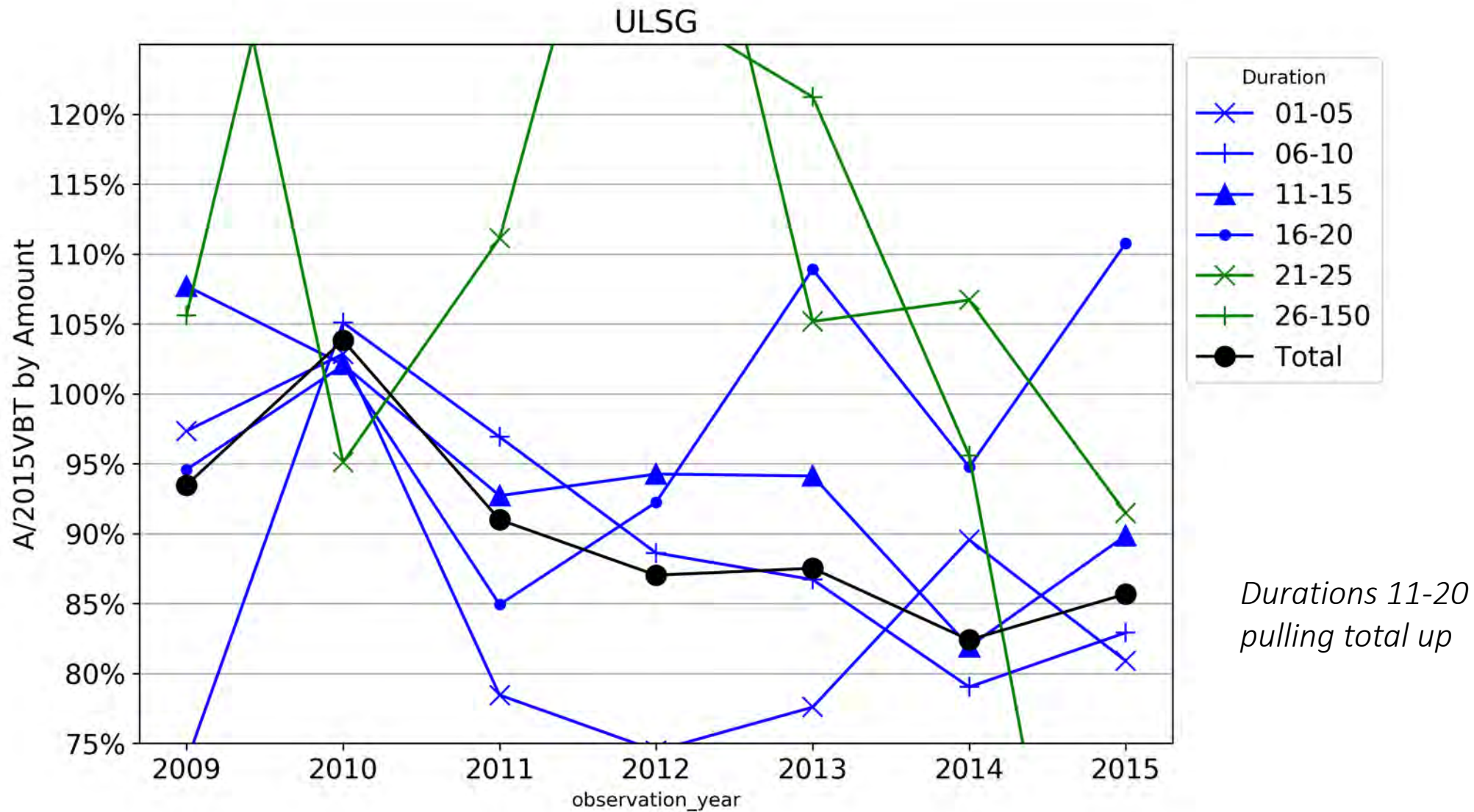# Term by issue age
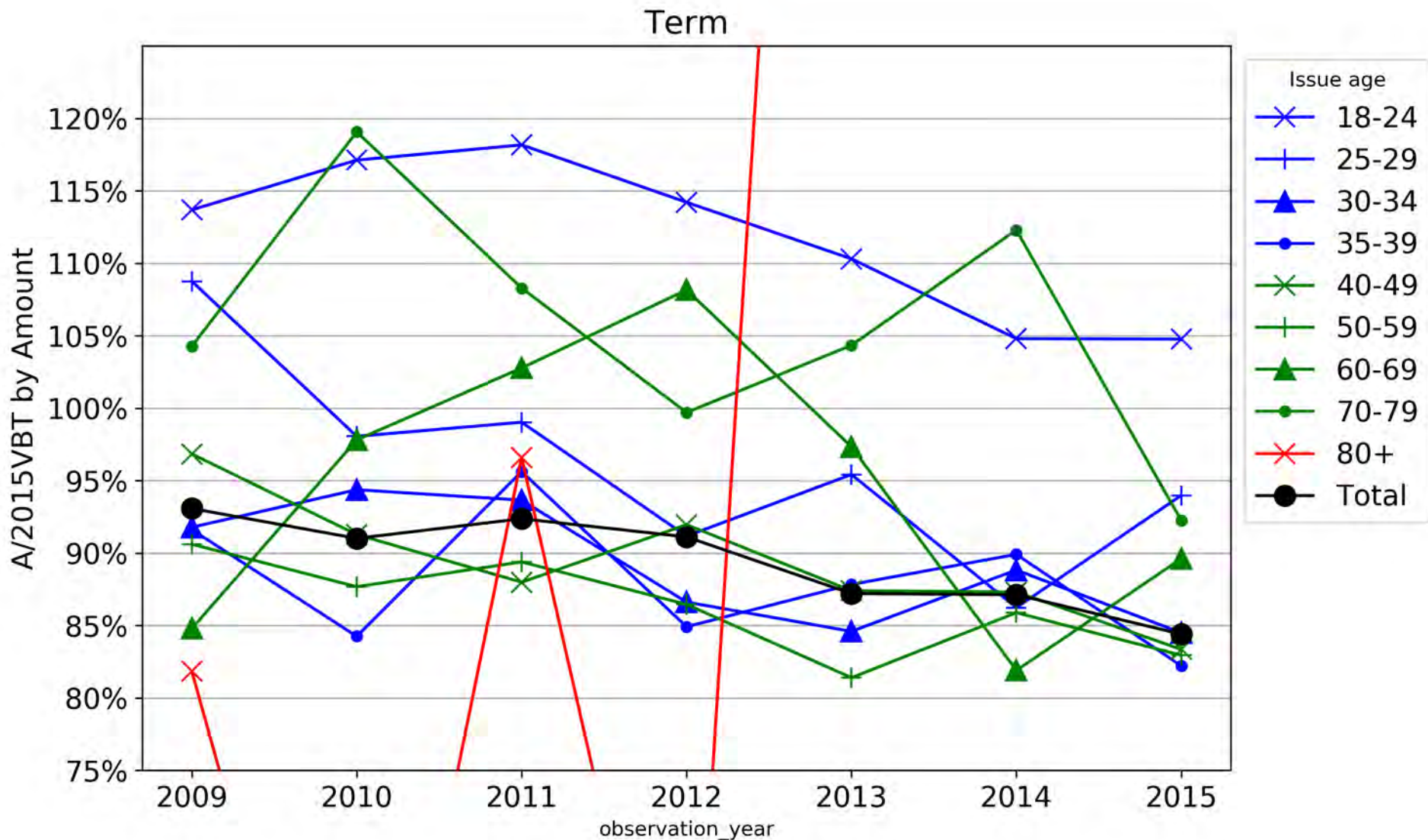
Term by duration
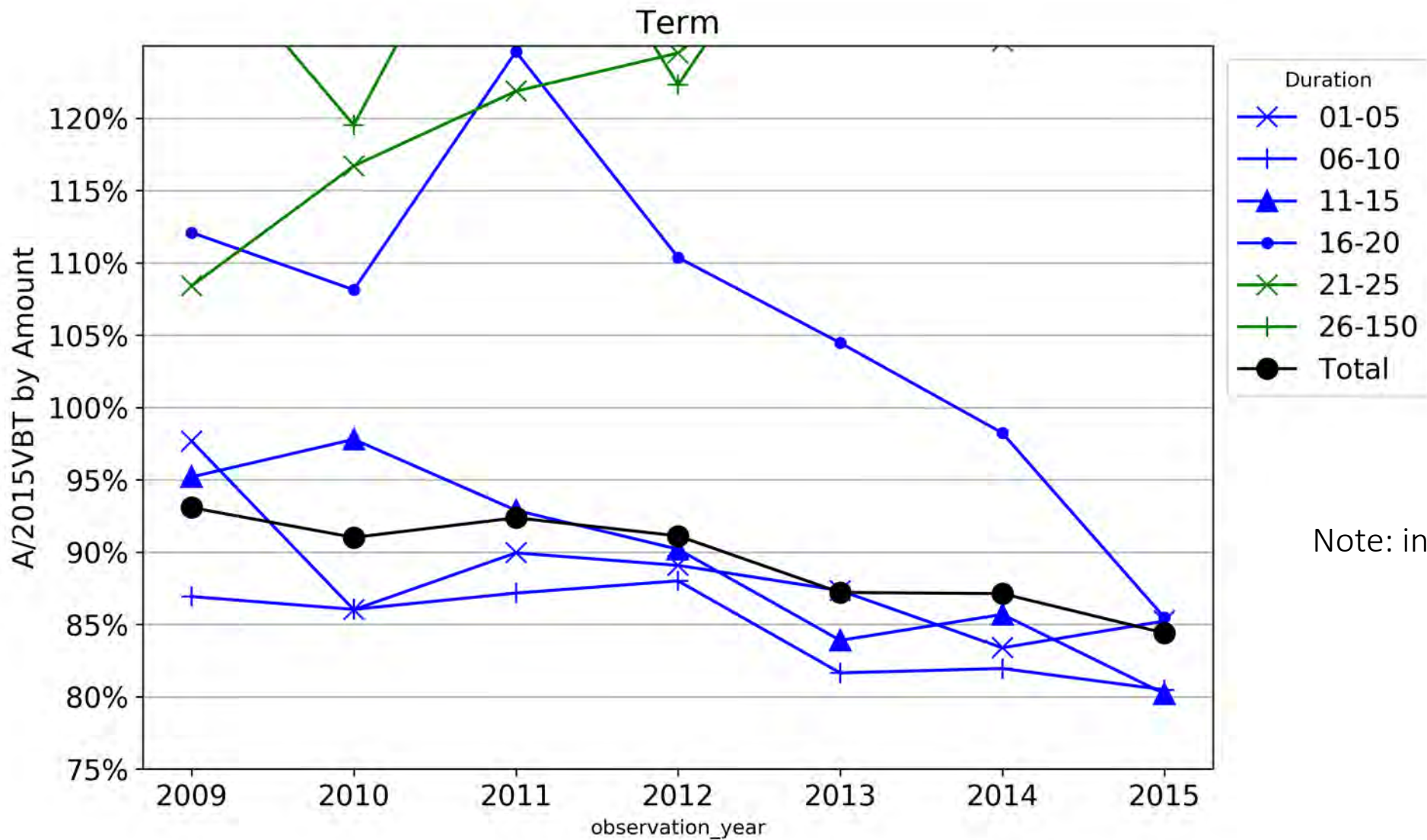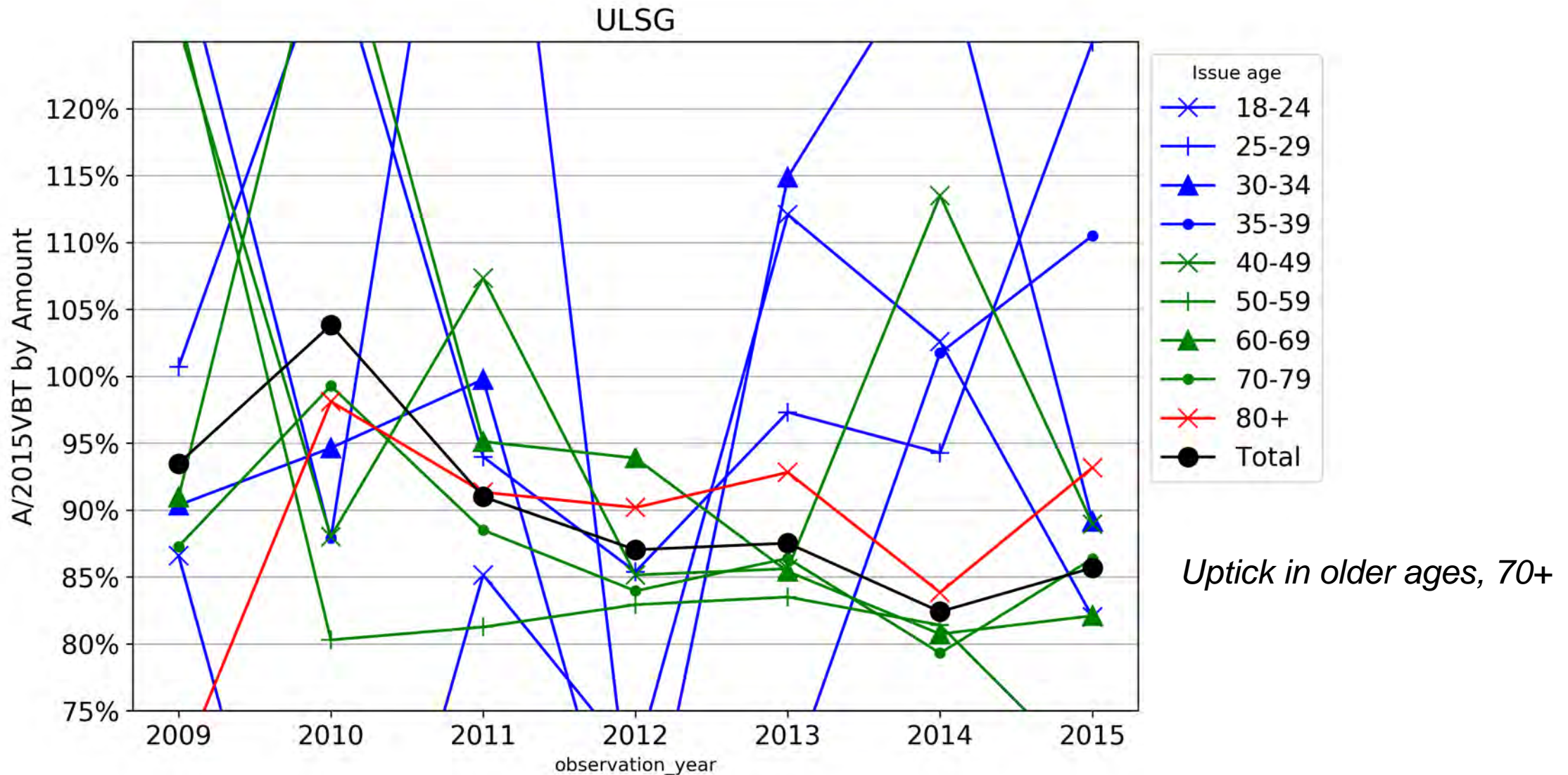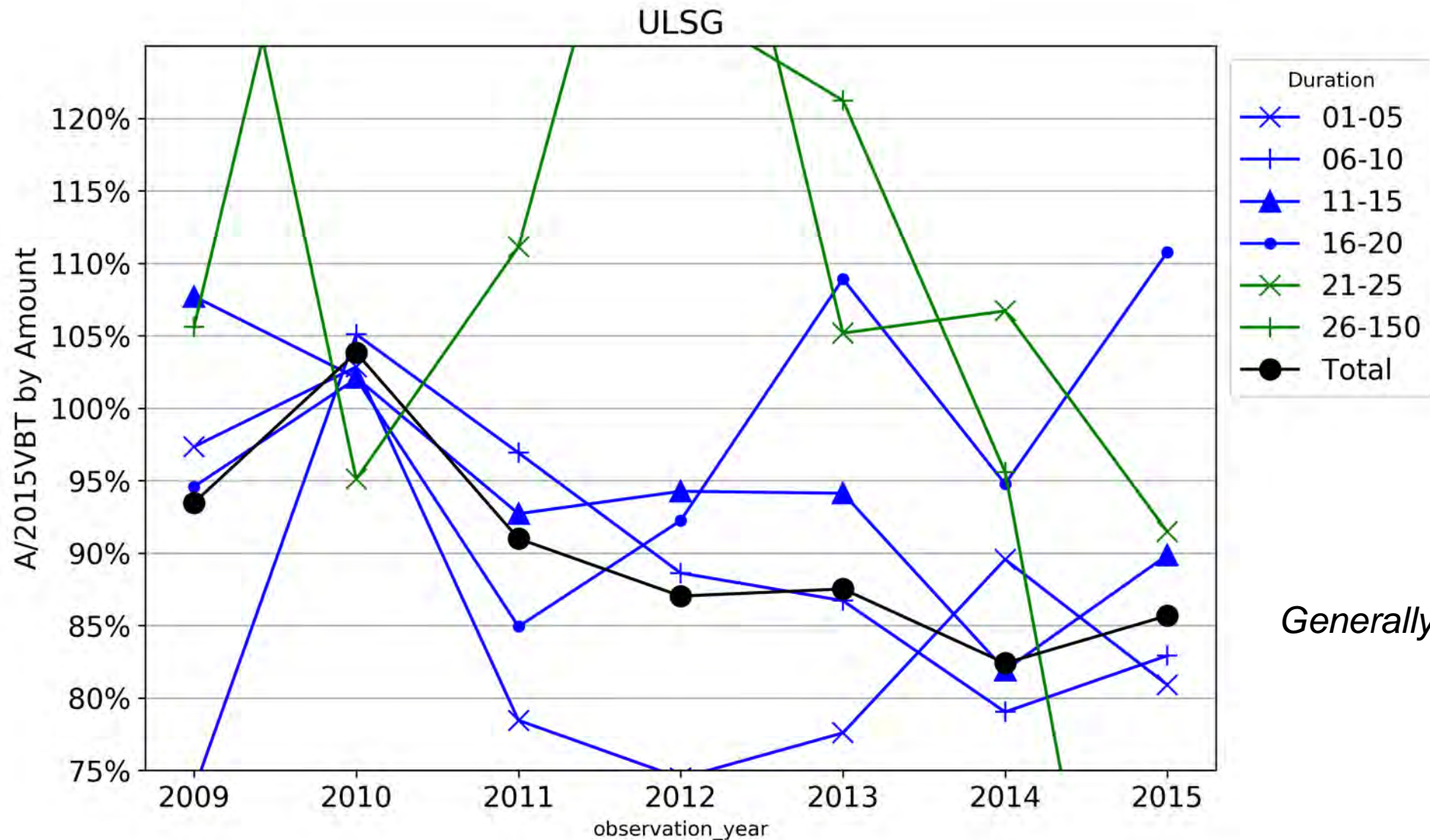

Note: includes PLT

UL by face

UL by issue age

UL

60-69 iss age pulling total up

UL by duration

ULSG

Durations 11-20 pulling total up

ULSG by face

ULSG

Uptick in large amounts

ULSG by issue age

ULSG

Uptick in older ages, 70+

ULSG by duration

Generally up dur 6-20
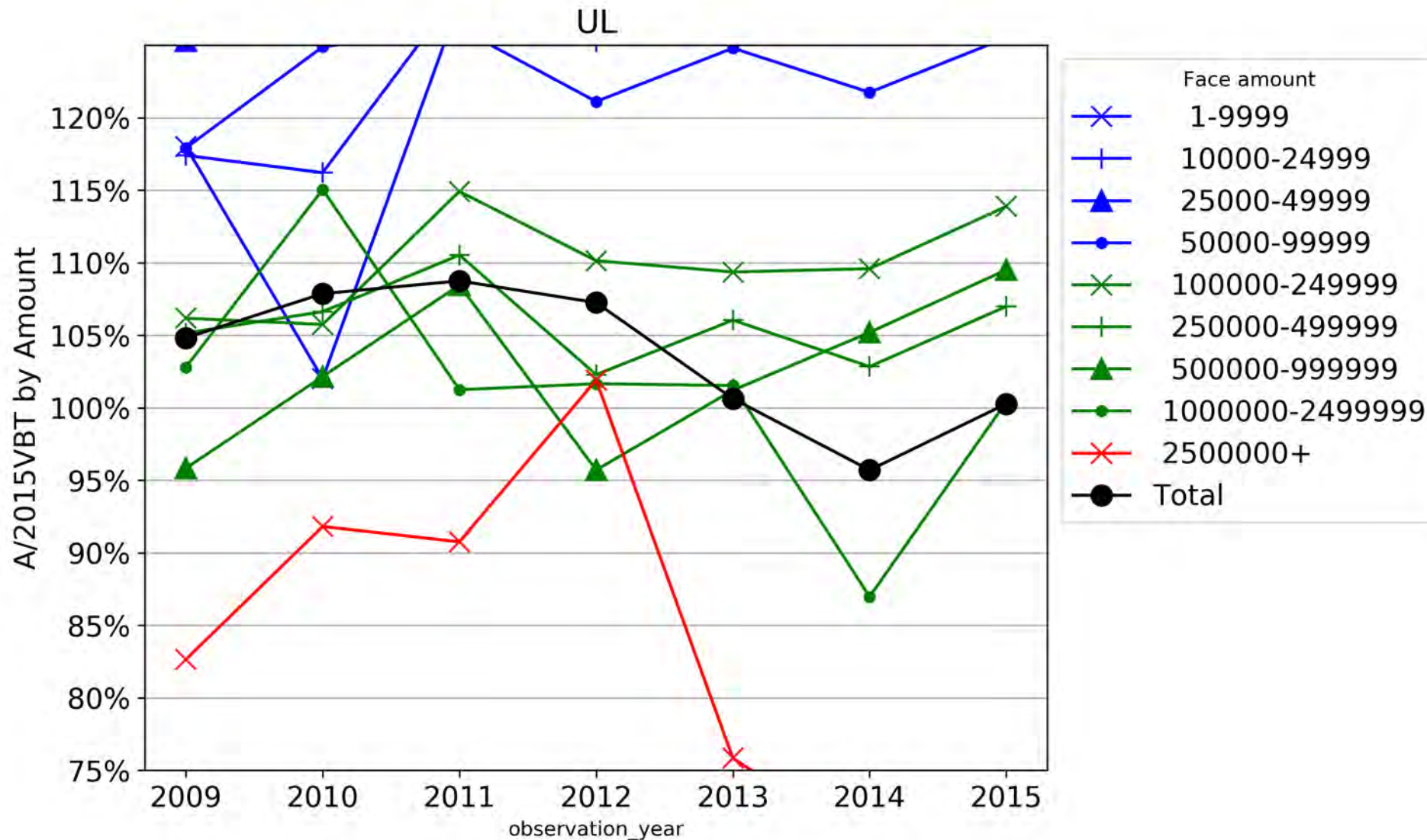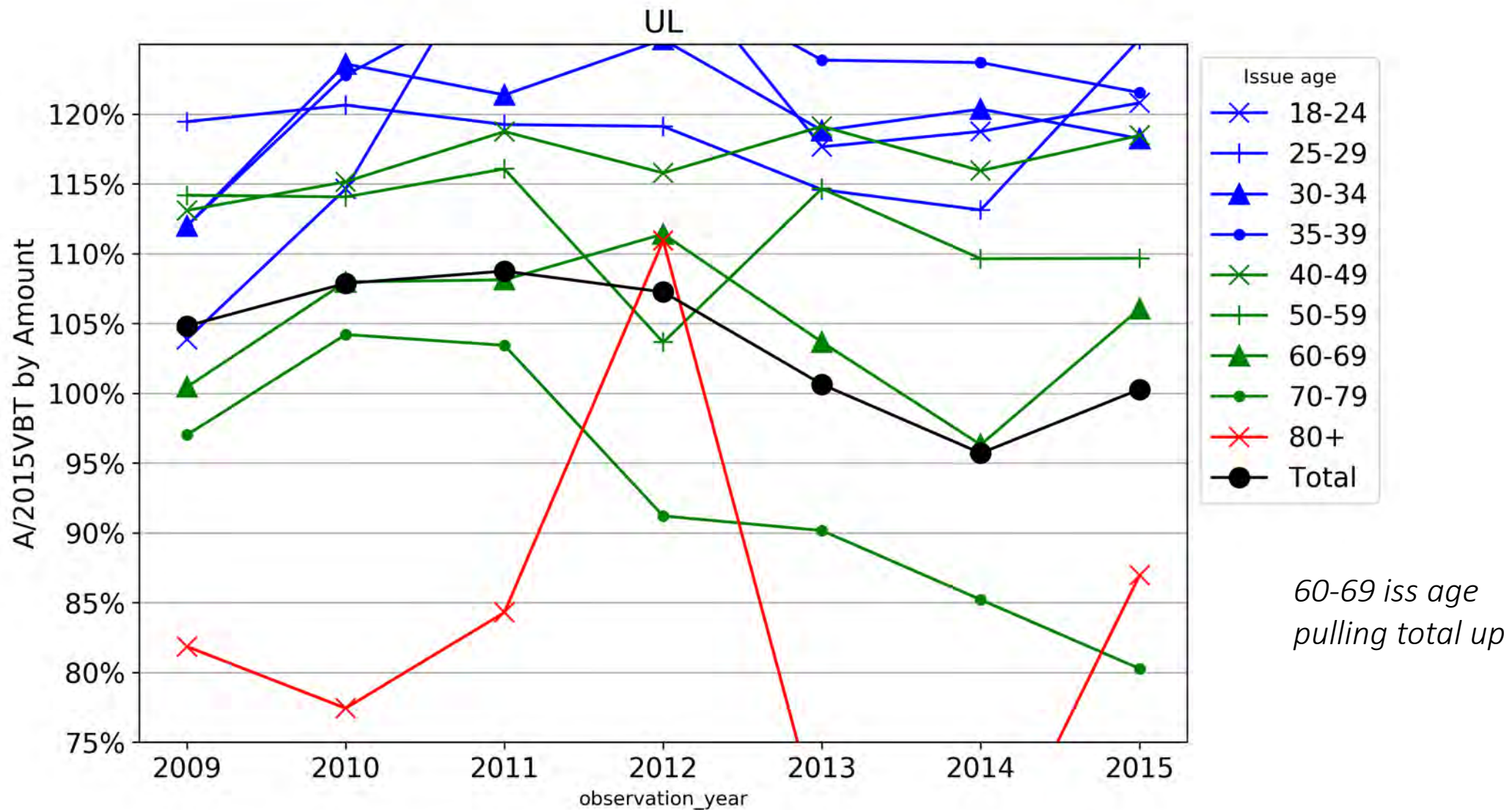
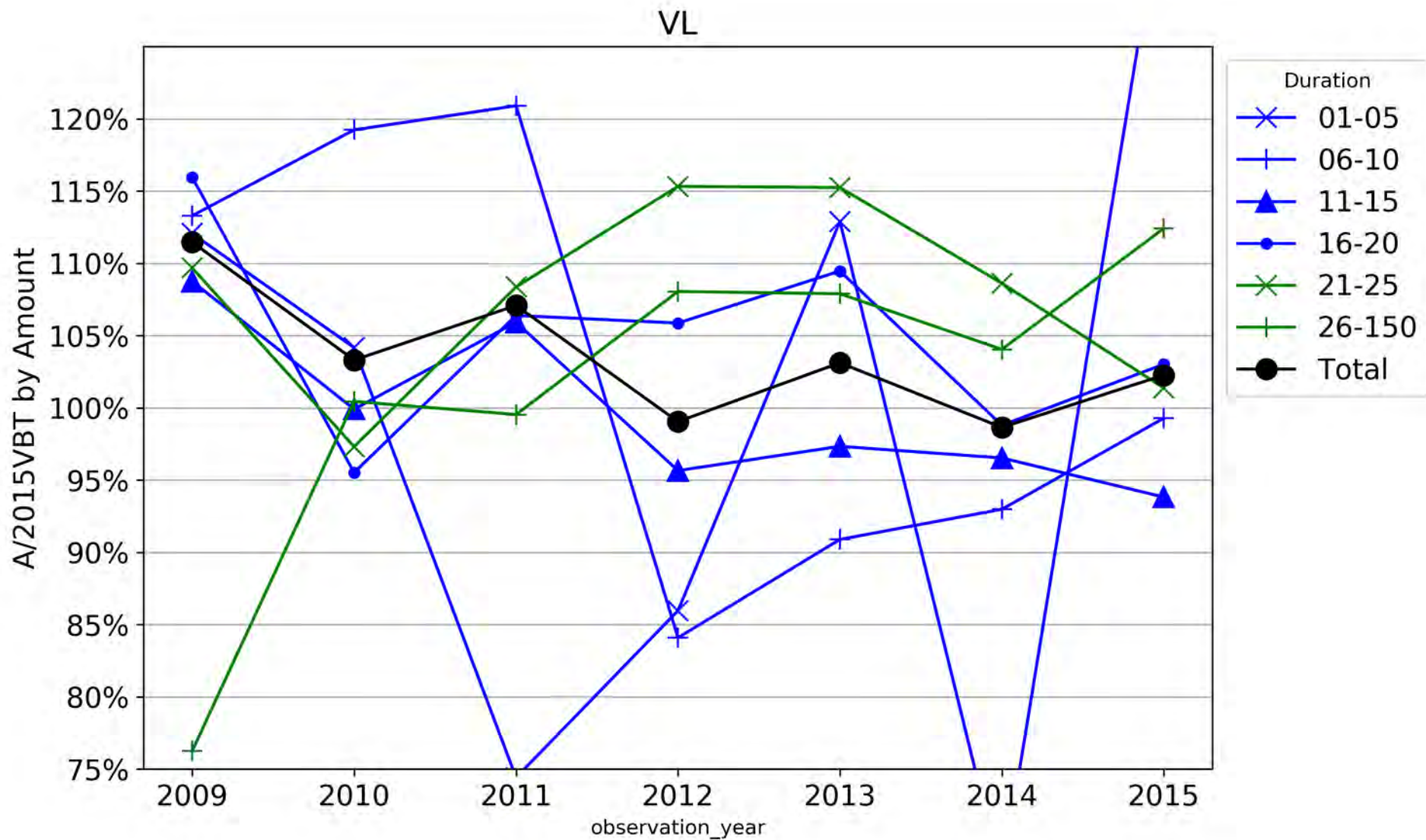# VUL by face
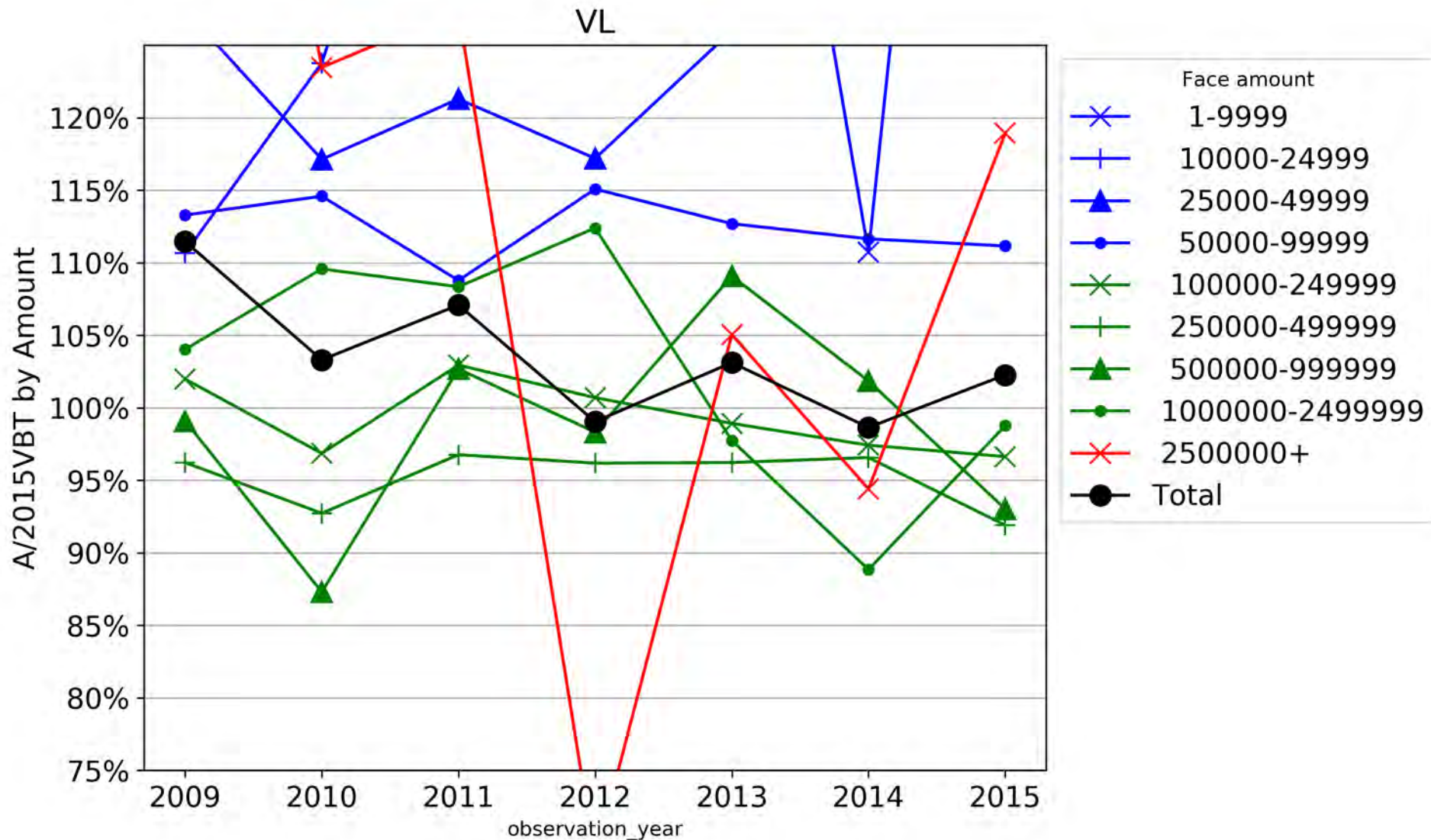
VUL by issue age

VUL by duration

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