



2009 Casualty Loss Reserve Seminar

Workers' Compensation - How Long Is The Tail?
LOB-4

Presentation by

Tim Wisecarver, FCAS, MAAA, FCA, FIDM



2009 CLRS
Workers Compensation – How Long Is The Tail?

- A Clarifying Question –

What Is The “Tail”?



2009 CLRS Workers Compensation – How Long Is The Tail?

- Some Possible Answers –
 - The period of time over which payments for a given accident year or policy year continue to be made
 - The point after which anticipated loss development is “small” or “very small”
 - The part of our loss payout extending after reasonable prospects for return-to-work have ended
 - The extended part of our loss payout for which we do not have detailed historical data (like age-to-age factors)
 - Other



2009 CLRS
Workers Compensation – How Long Is The Tail?

- An Alternative Question –
 - How Big Will The Tail Be?
 - (...For Various Past Periods (Reserving))
 - (...For a Future Period(s) (Pricing))



2009 CLRS Workers Compensation – How Long Is The Tail?

- Some Analysis –

What Portions of Payments Are In the “Tail”?

2009 CLRS Workers Compensation – How Long Is The Tail?

- Pennsylvania Data - 2009 Loss Cost Filing

- Case Incurred LFDs @ 20th Report:

- Indemnity - 1.0039 Medical – 1.0454

- Implied Paid LDFs at 19th Report:

- Indemnity - 1.0511 Medical - 1.1630



2009 CLRS Workers Compensation – How Long Is The Tail?

“Old Time” PCRB Tail Factor Methodology

- Paid and case incurred loss data was reported by Policy Year for 20 years (or so)
- Development on older Policy Years was reported in the aggregate
- The calendar year contribution to development on the old (aggregated) Policy Years was thought to be pretty accurate
- The statement of cumulative paid and case incurred for the old (aggregated) Policy Years was not reliable



2009 CLRS Workers Compensation – How Long Is The Tail?

“Old Time” PCRB Tail Factor Methodology

- Calendar year contribution to case incurred loss development on the old (aggregated) policy years was compared to the start-of-year case incurred loss for the oldest available individual policy year
- The result plus 1.0 was the loss development “tail factor”
- Key Assumption – All the old Policy Years contributing to the aggregate calendar year loss development were of equal size



2009 CLRS Workers Compensation – How Long Is The Tail?

“New” PCRB Tail Factor Methodology

- Calendar year contribution to case incurred loss development on the old (aggregated) policy years is replicated using the following constructs:
 - A next-oldest Policy Year loss amount estimated using the oldest three available individual Policy Years
 - A loss inflation/deflation factor based on observed year-to-year changes in aggregate losses for older available individual Policy Years

2009 CLRS Workers Compensation – How Long Is The Tail?

“New” PCRB Tail Factor Methodology

- Calendar year contribution to case incurred loss development on the old (aggregated) policy years is replicated using the following constructs:
 - A 21st-report age-to-age development factor selected based on older available individual years
 - A decay factor in annual LDFs

The two above constructs are adjusted until application of the implied LDFs to the series of Policy Year base loss amounts replicates the observed calendar year case incurred loss development for the old (aggregated) Policy Years

2009 CLRS Workers Compensation – How Long Is The Tail?

“New” PCRB Tail Factor Methodology

- Tail Factors Increase (Somewhat) by Recognizing Expected Loss Inflation
 - New: Indemnity – 1.0039 Medical – 1.0454
 - Old: Indemnity – 1.0036 Medical – 1.0391
- Implied Case Incurred Loss Development Extends Back to Early 1940's (for 2009 Filing Using Financial Data through 12/31/07)



2009 CLRS
Workers Compensation – How Long Is The Tail?

- Another Question –

Do We Expect The Tail To Change?



2009 CLRS Workers Compensation – How Long Is The Tail?

- Possible Answers and Reasons Why –
- Yes, We Expect The Tail To Get **Longer/Larger**
 - Claimant Longevity
 - Benefit/Price Inflation
 - More Permissive Reopening Provisions
 - Medicare Set-Aside Requirements
 - Aging Workforce (Recovery/Vocational Issues)
 - Other?



2009 CLRS Workers Compensation – How Long Is The Tail?

- Possible Answers and Reasons Why –
- Yes, We Expect The Tail To Get **Shorter/Smaller**
 - More &/or Better Settlement Options
 - More Effective Treatments
 - Aging Workforce (Reduced Life Expectancy)
 - Other?



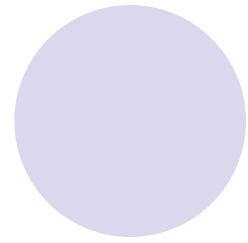
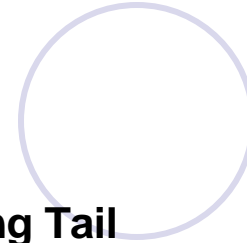
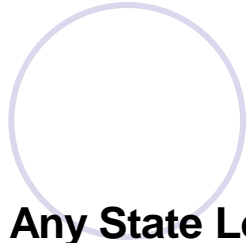
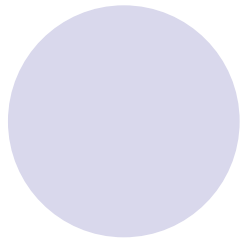
2009 CLRS
Workers Compensation – How Long Is The Tail?

- Possible Answers and Reasons Why –
- No, We Expect The Tail To Be **Stable**
 - Nothing Much is Going On Out There
 - Everything Will Sort of Balance Out in the End

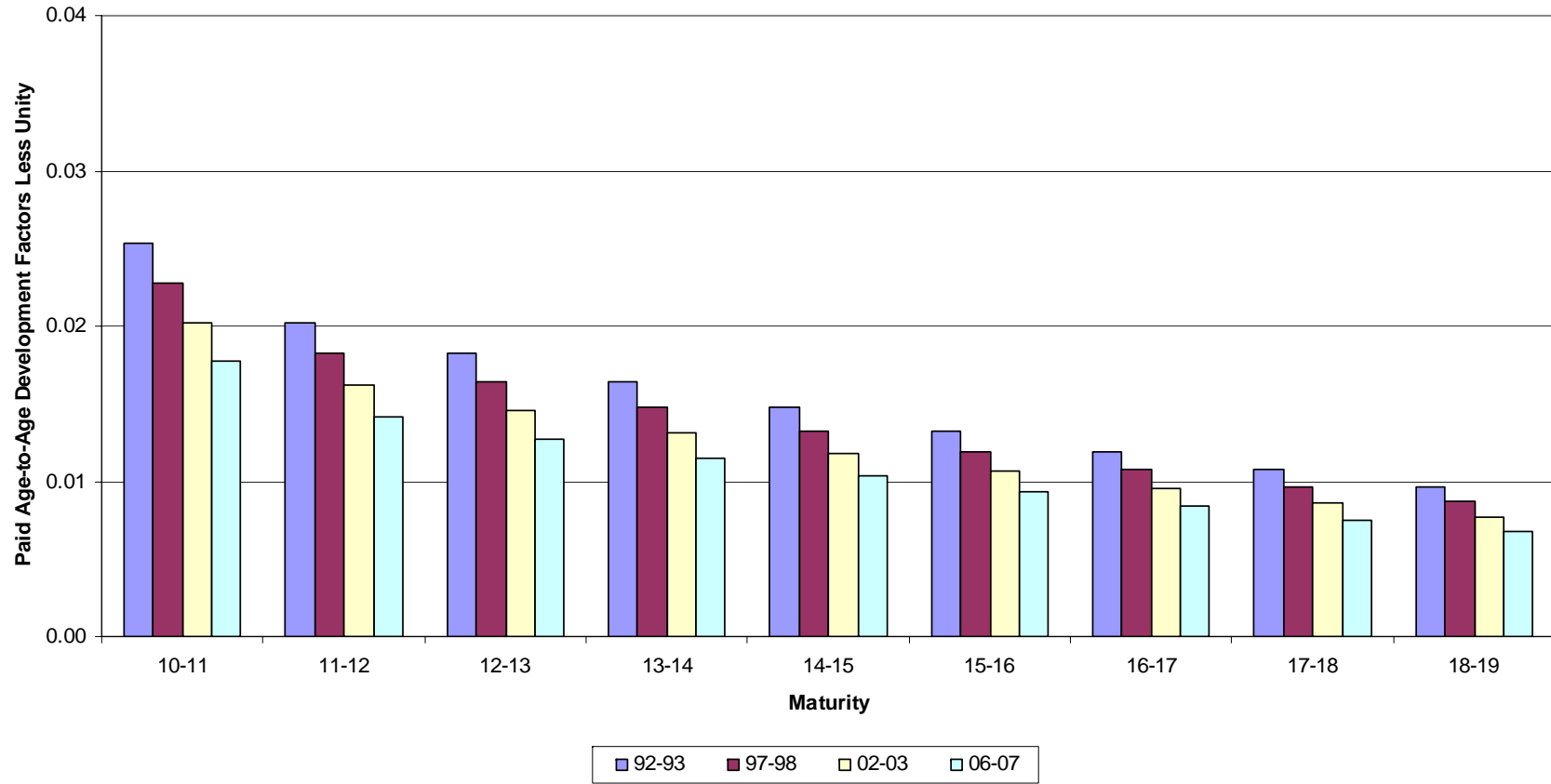


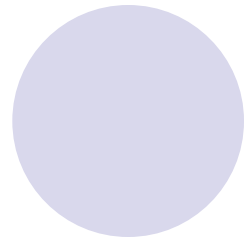
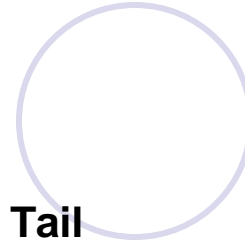
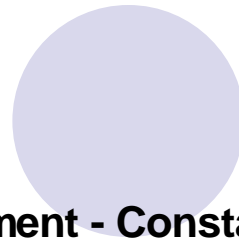
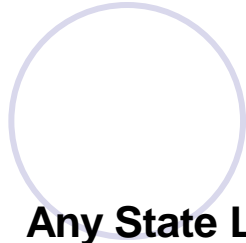
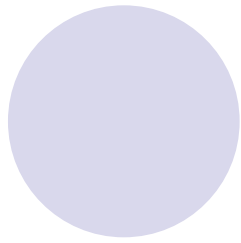
2009 CLRS
Workers Compensation – How Long Is The Tail?

- Some More Analysis –
- How **Has** The Tail Changed Over Time?

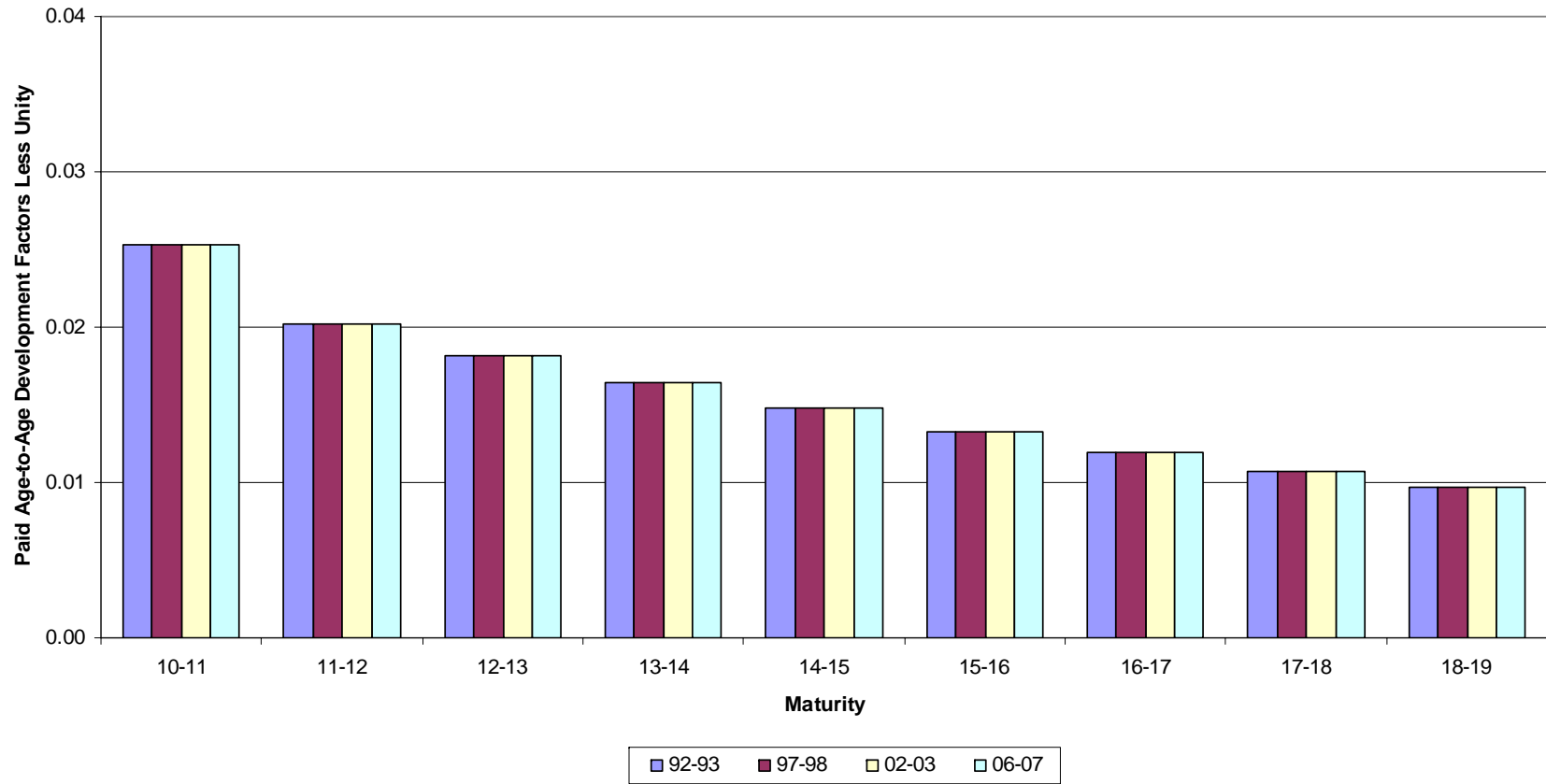


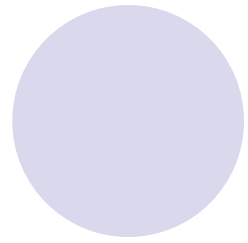
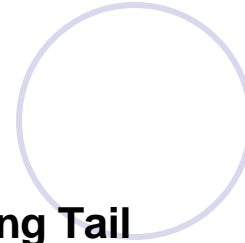
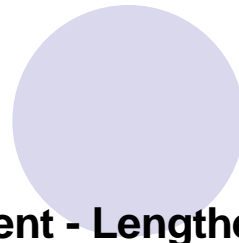
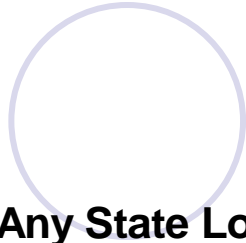
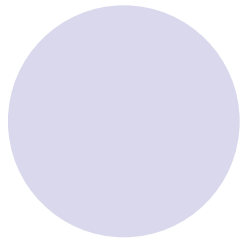
Any State Loss Development - Shortening Tail



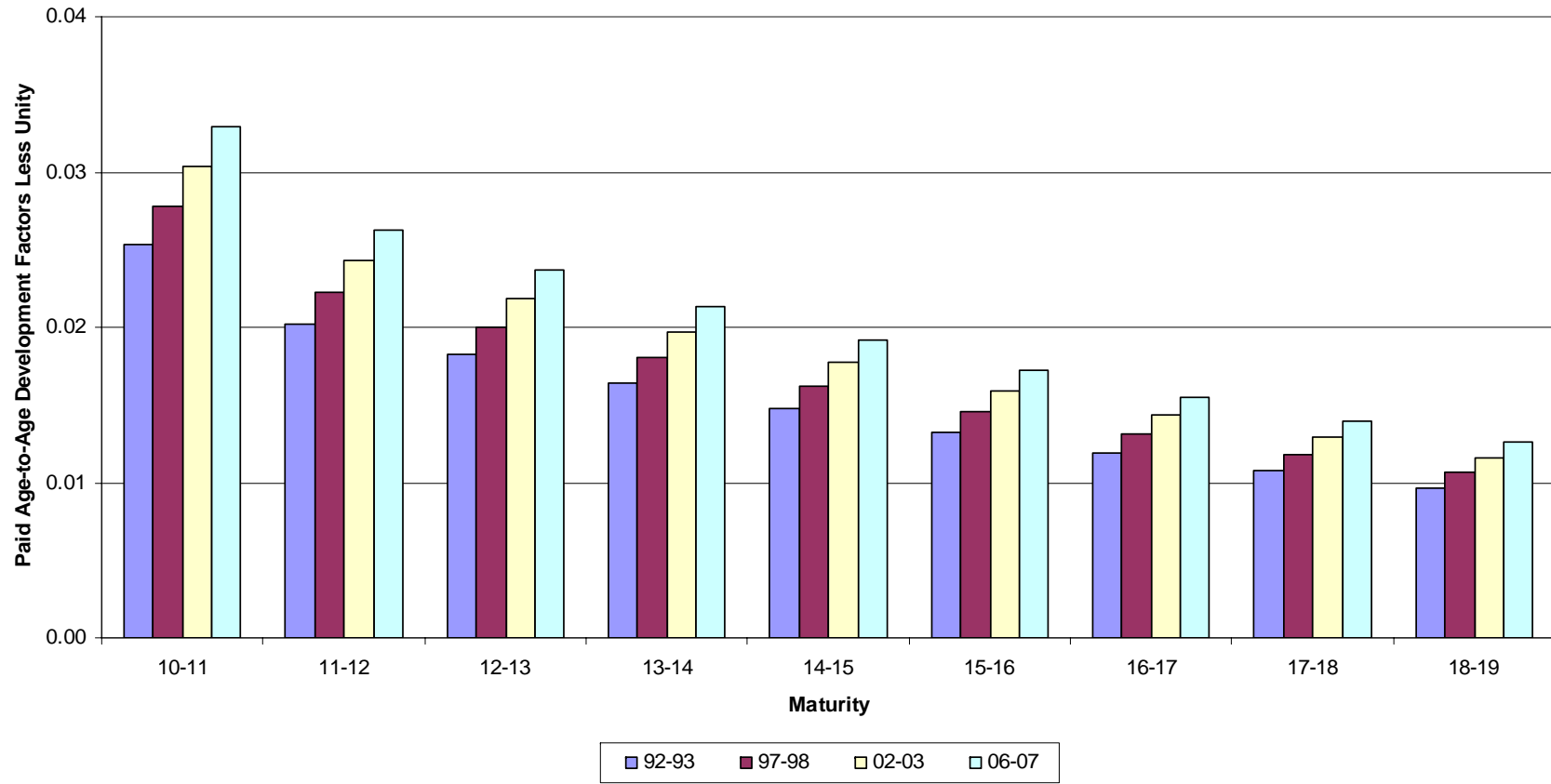


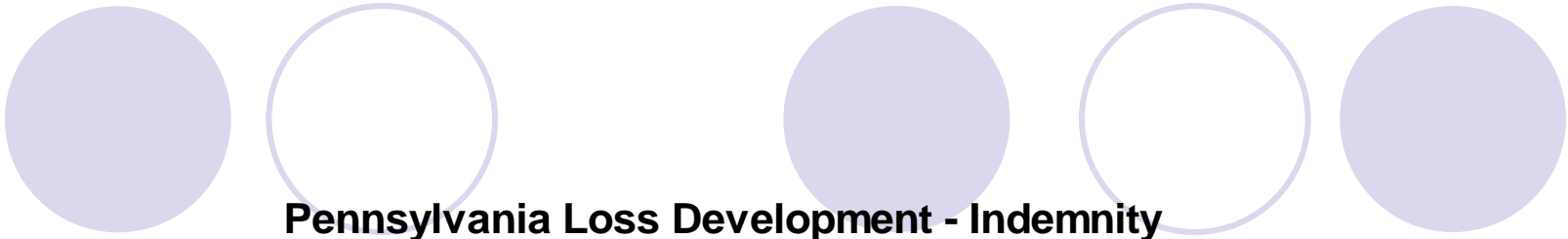
Any State Loss Development - Constant Tail



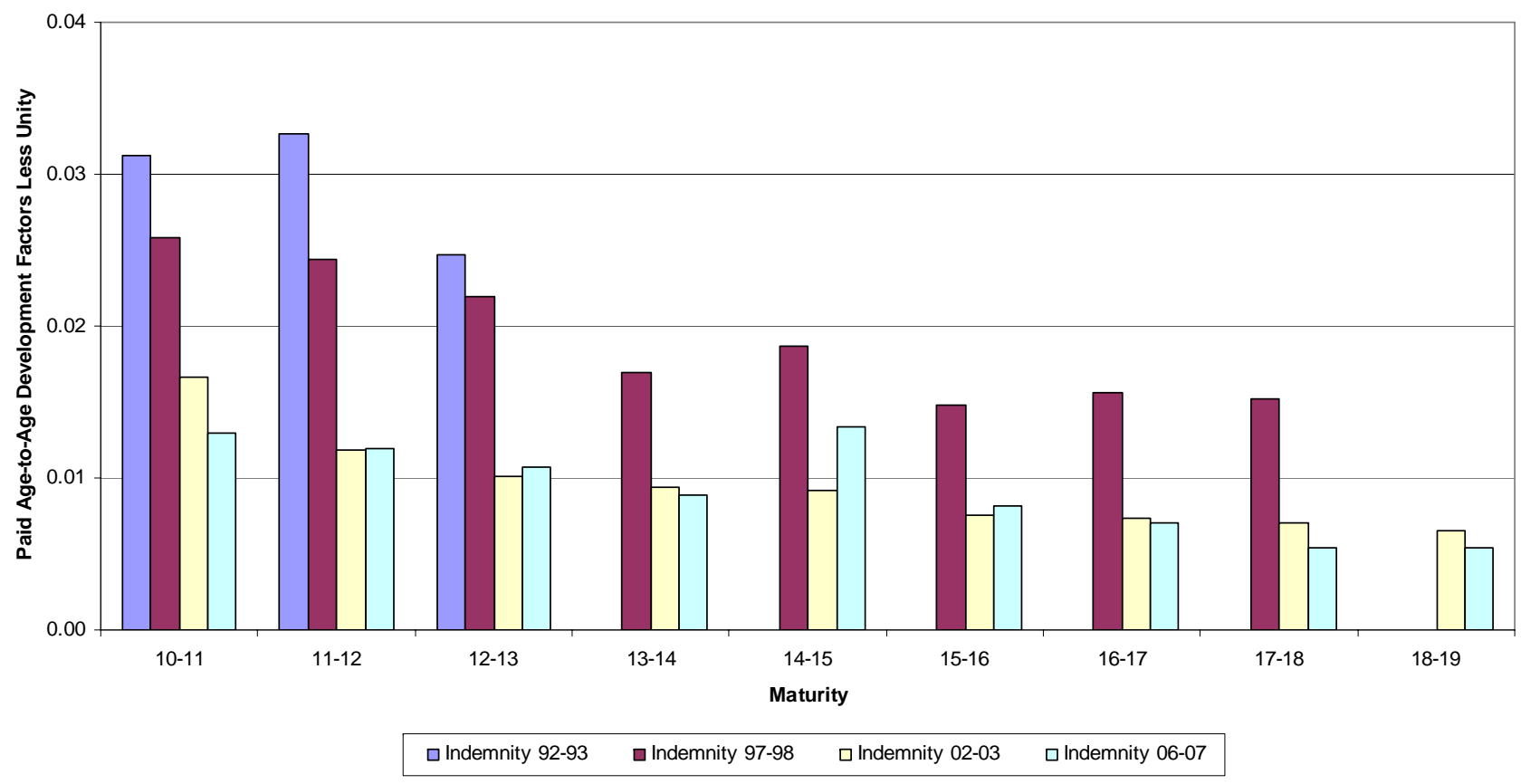


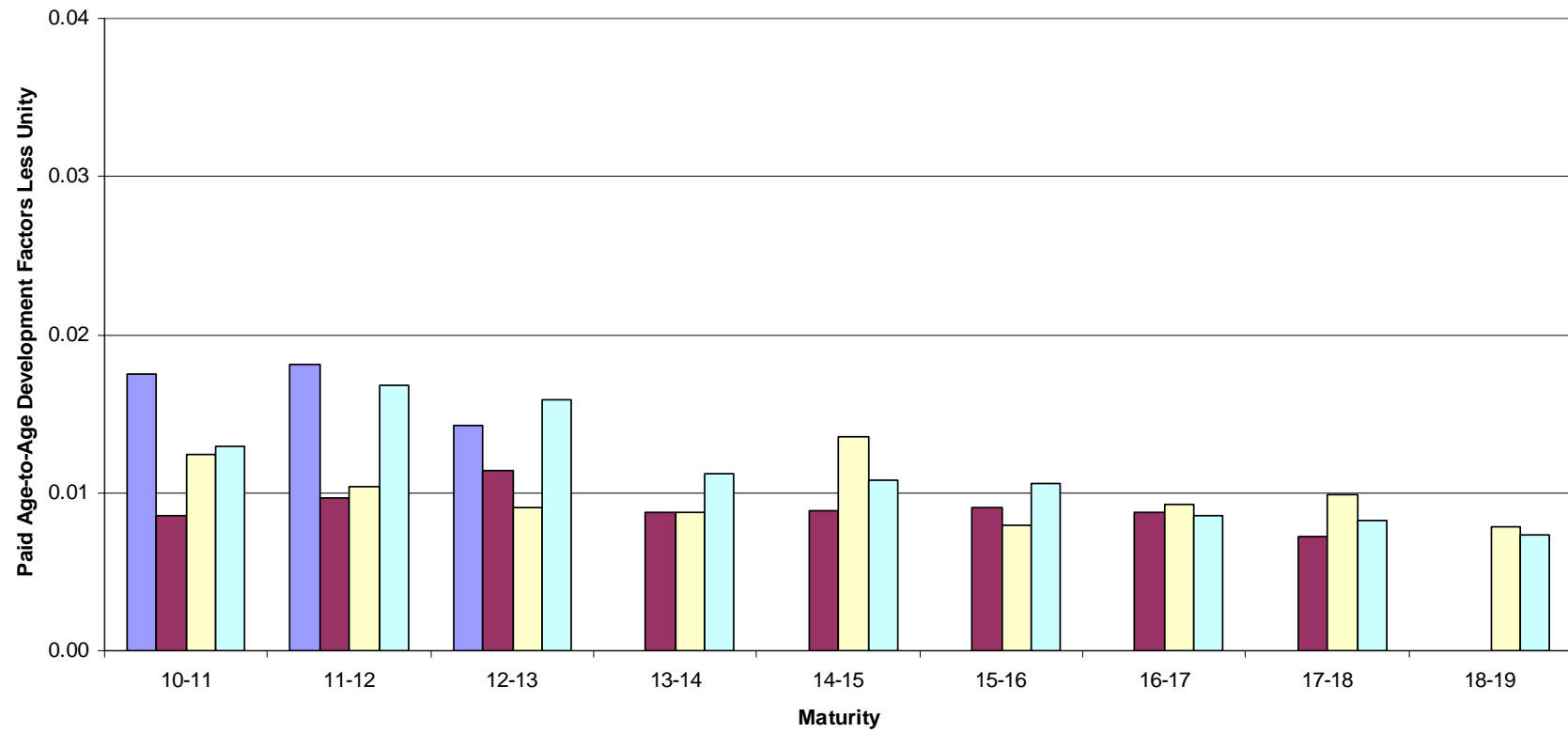
Any State Loss Development - Lengthening Tail





Pennsylvania Loss Development - Indemnity

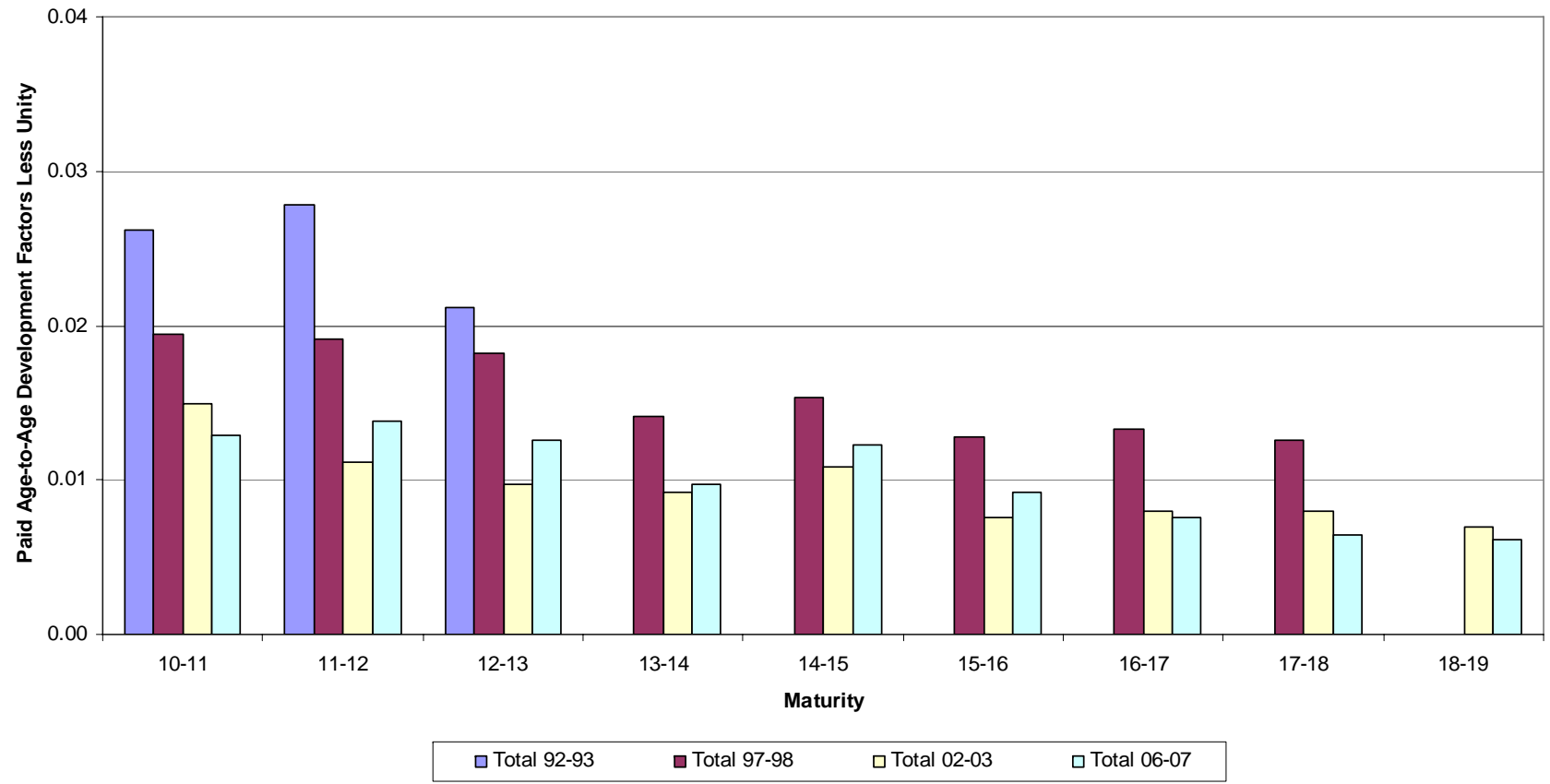




Medical 92-93 Medical 97-98 Medical 02-03 Medical 06-07

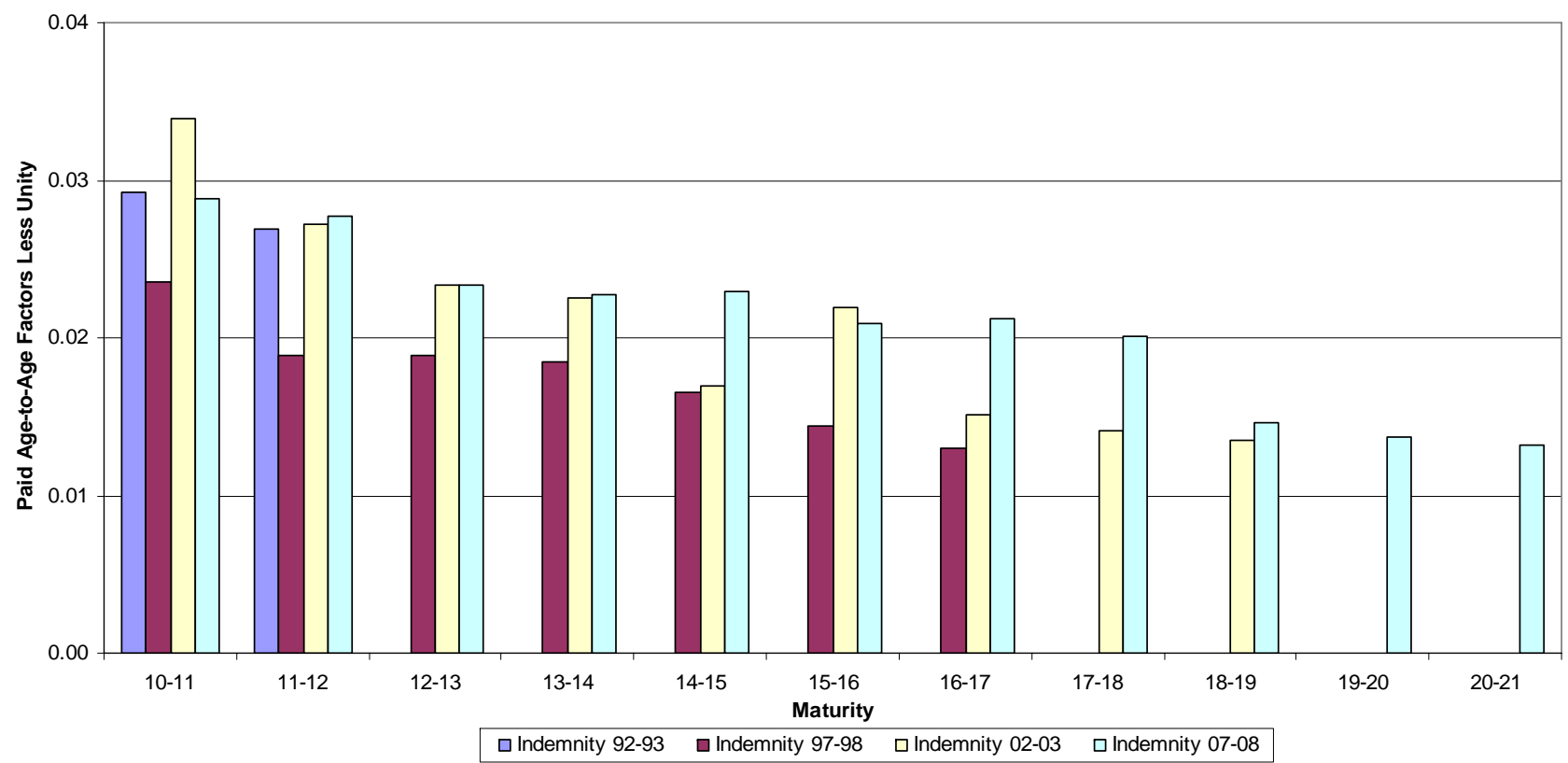


Pennsylvania Loss Development - Total

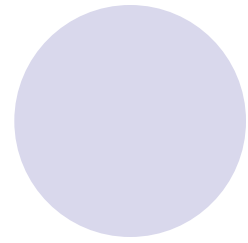
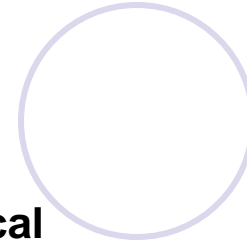
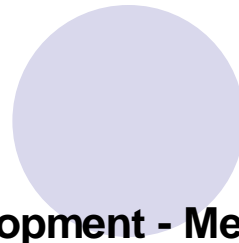
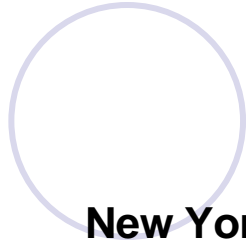
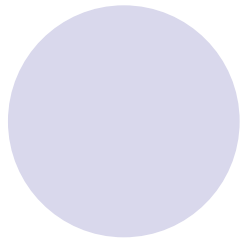




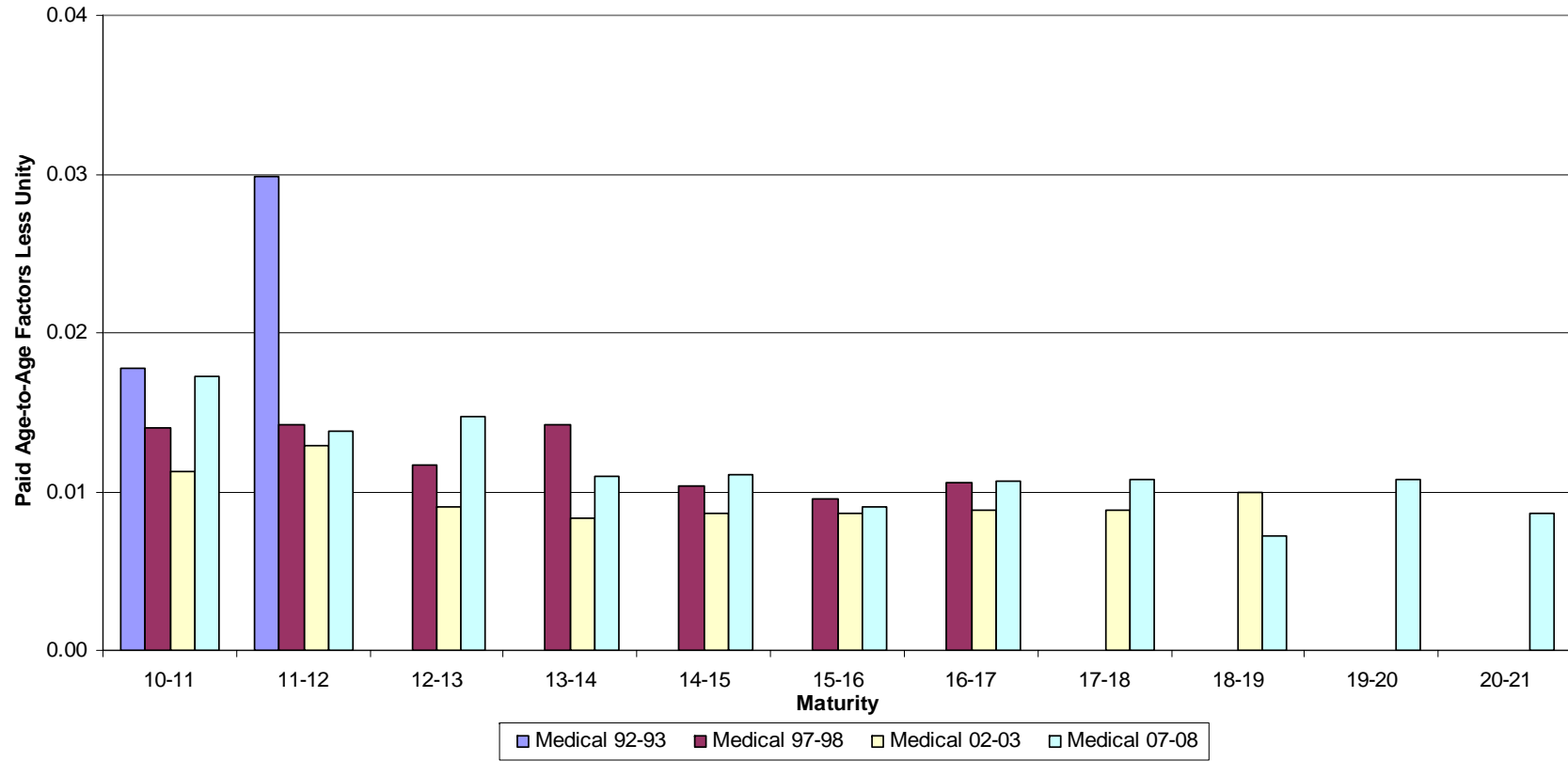
New York Loss Development - Indemnity



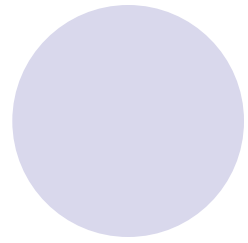
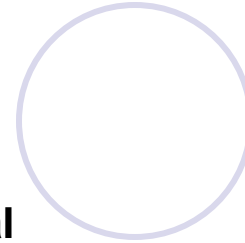
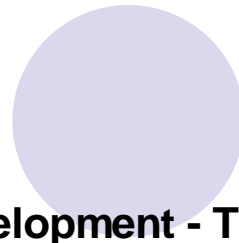
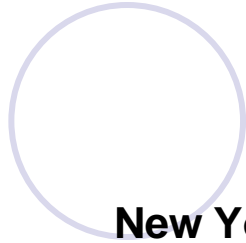
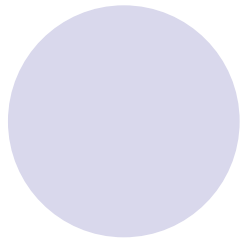
Source: New York Compensation Insurance Rating Board



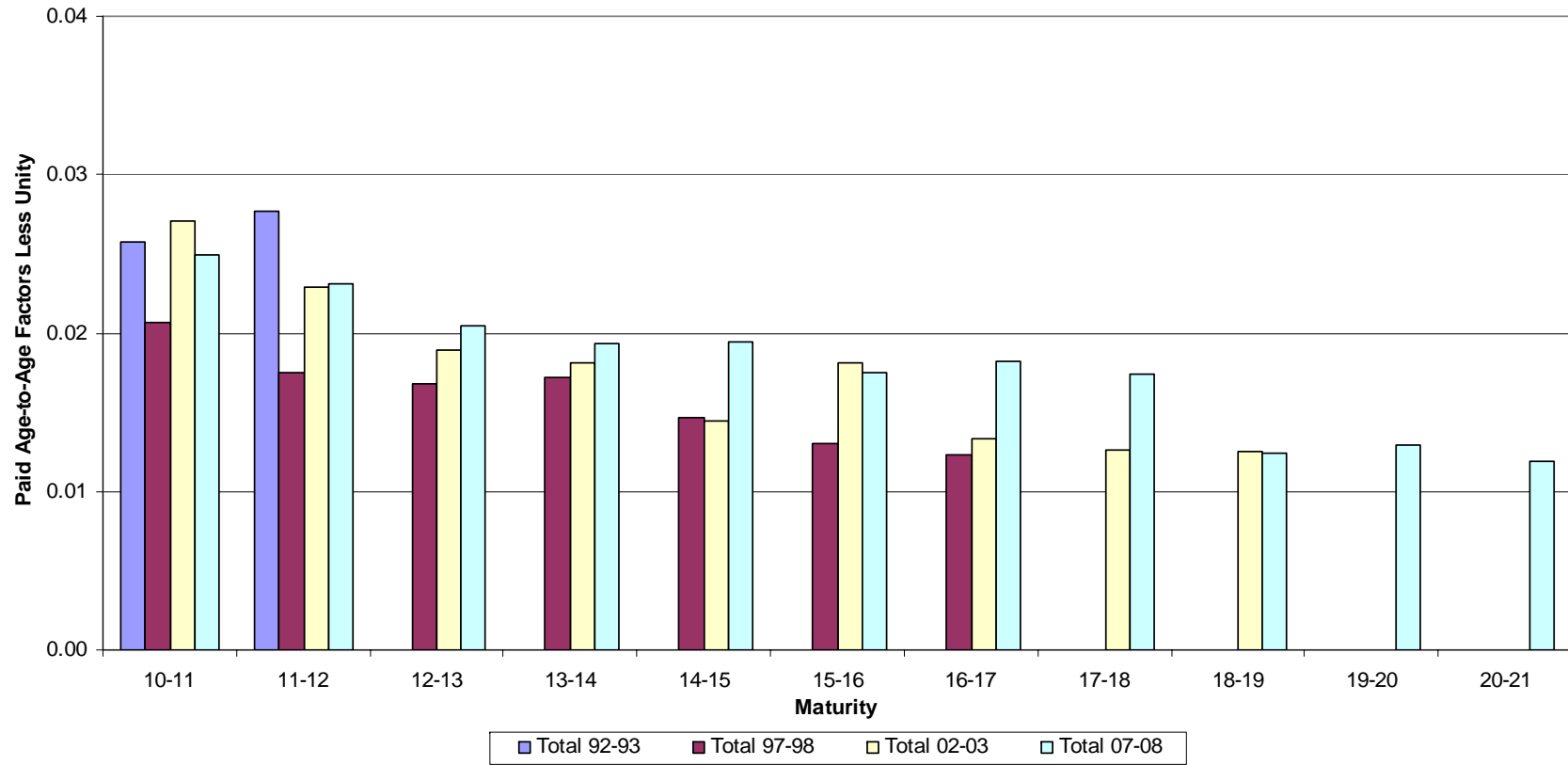
New York Loss Development - Medical



Source: New York Compensation Insurance Rating Board



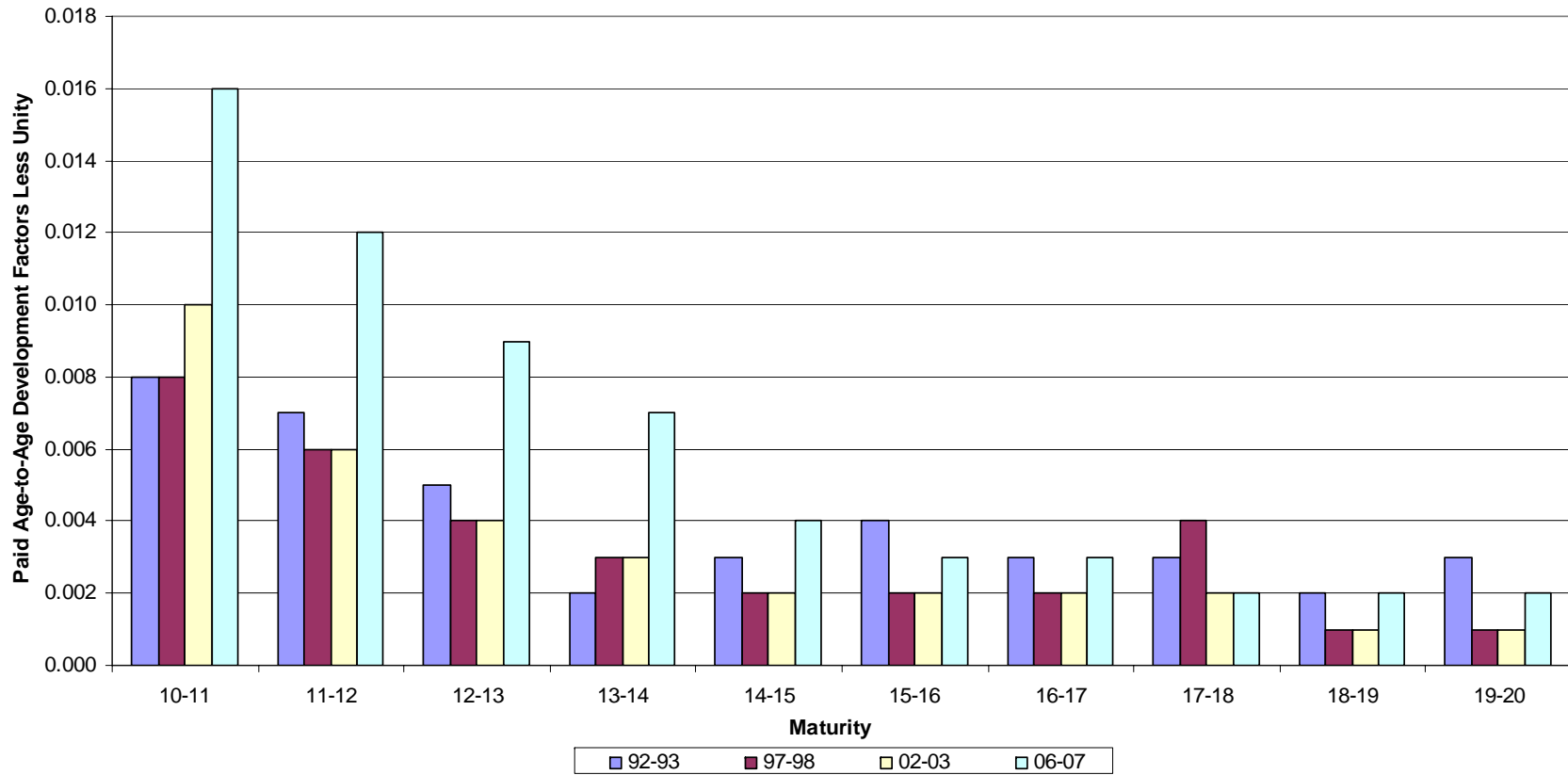
New York Loss Development - Total



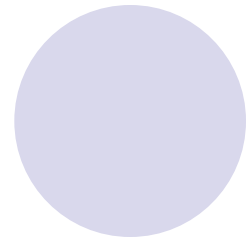
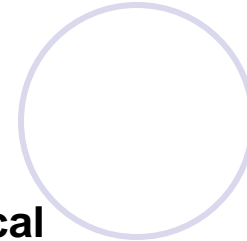
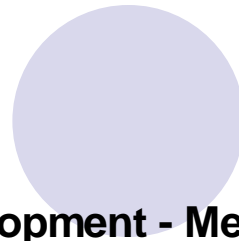
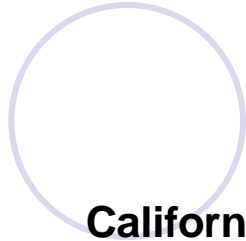
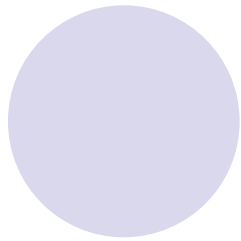
Source: New York Compensation Insurance Rating Board



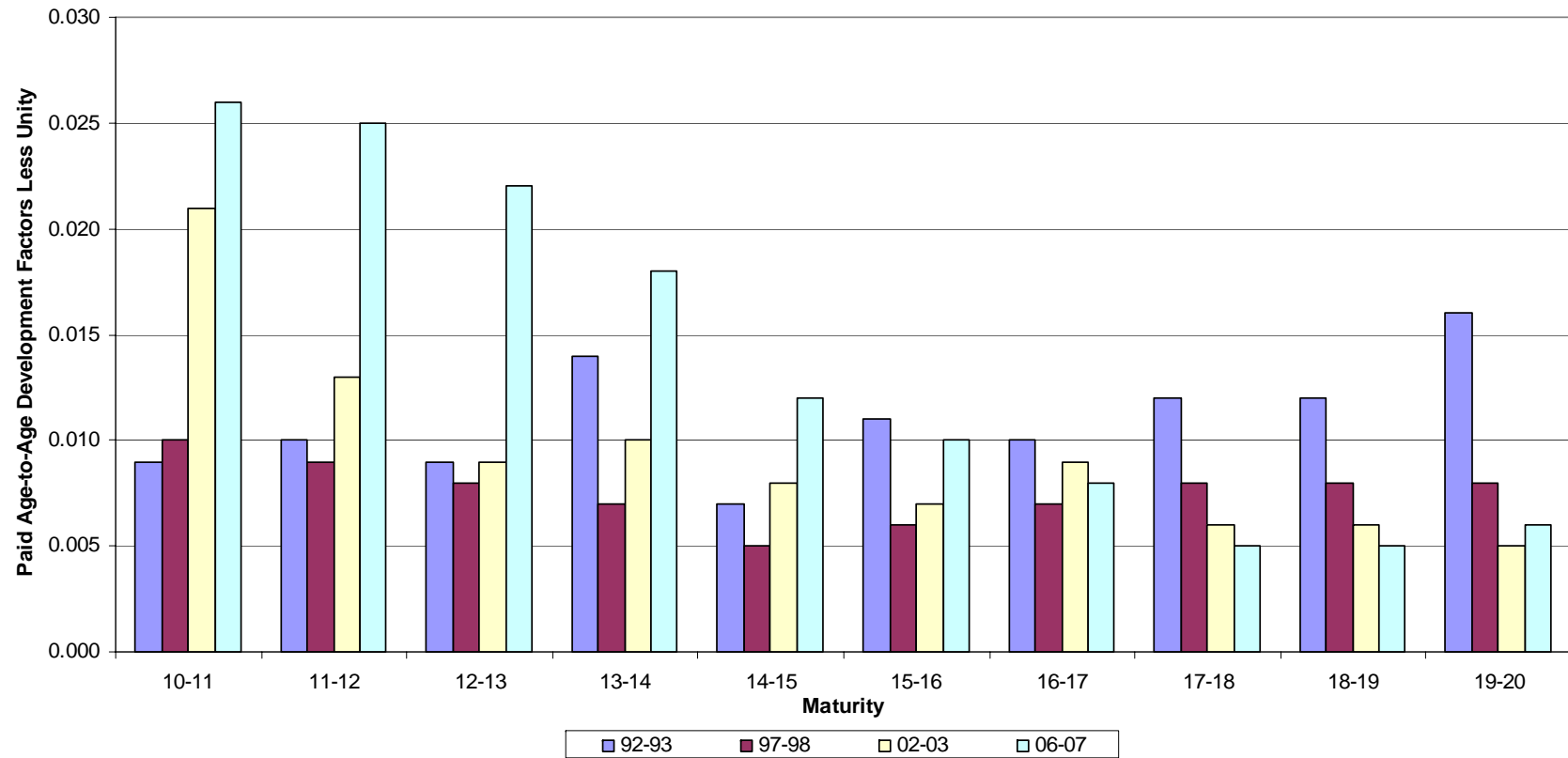
California Loss Development - Indemnity



Source: Workers' Compensation Insurance Rating Bureau of California

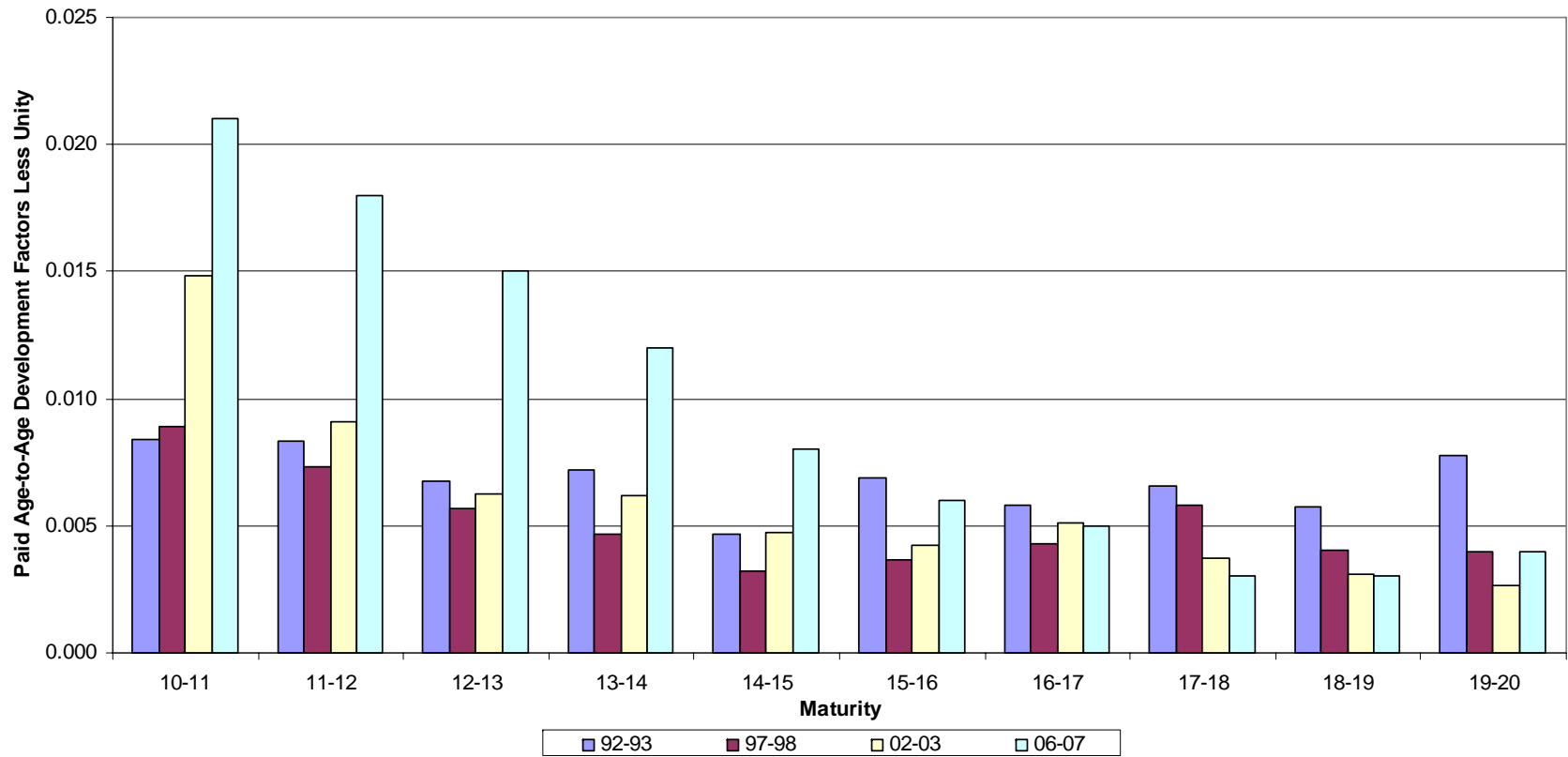


California Loss Development - Medical



Source: Workers' Compensation Insurance Rating Bureau of California

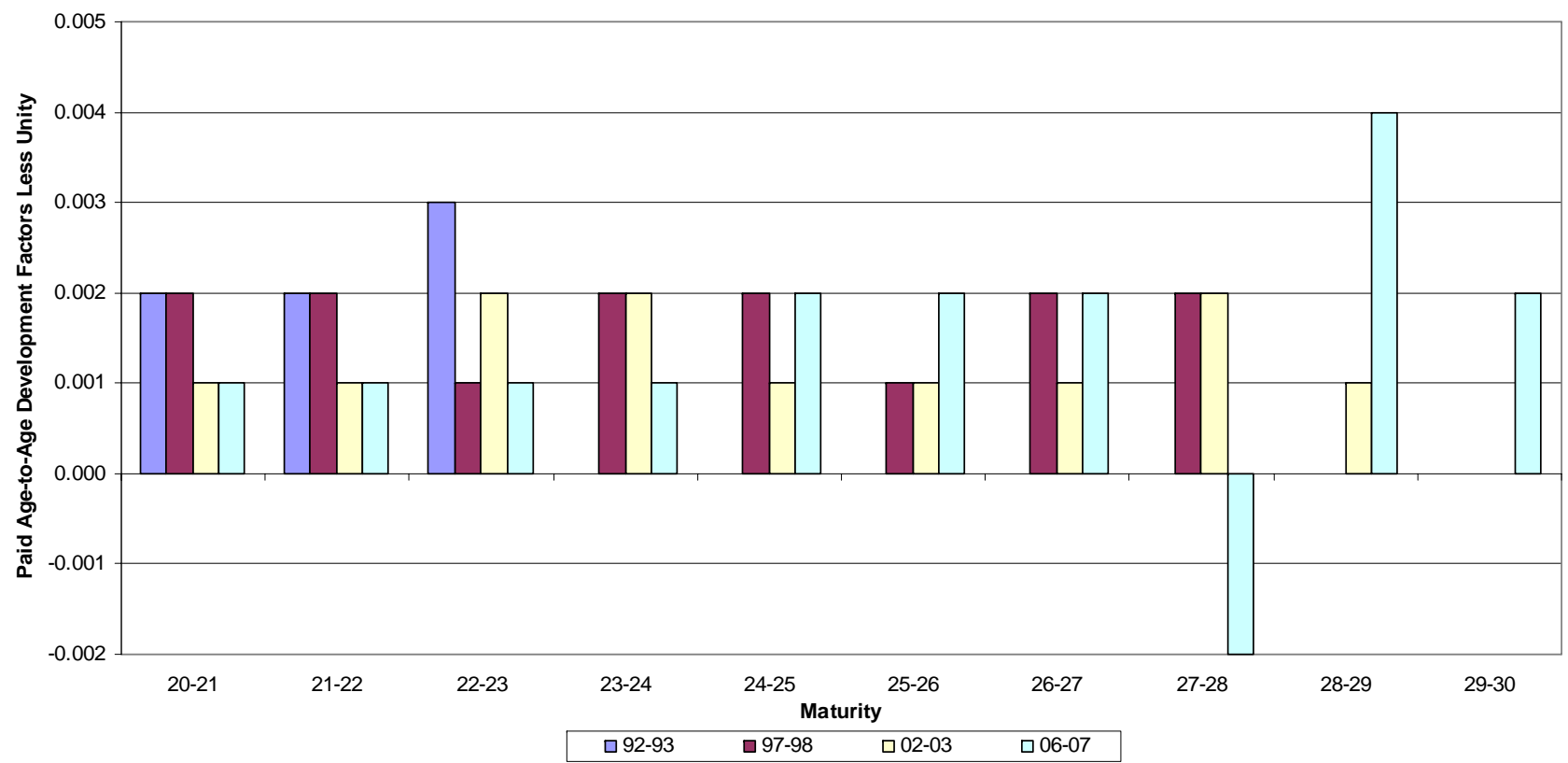
California Loss Development - Total



Source: Workers' Compensation Insurance Rating Bureau of California



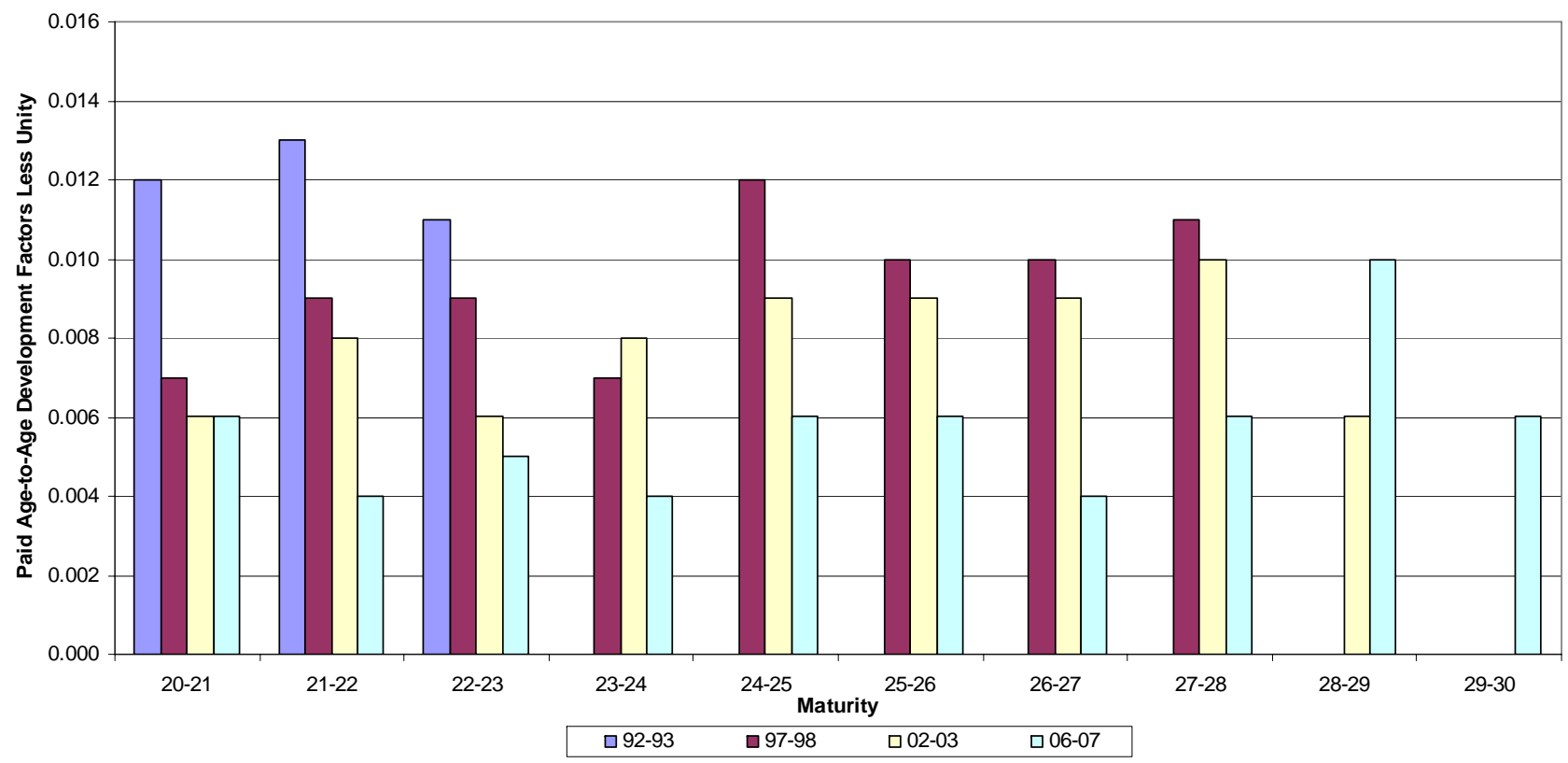
California Loss Development - Indemnity



Source: Workers' Compensation Insurance Rating Bureau of California



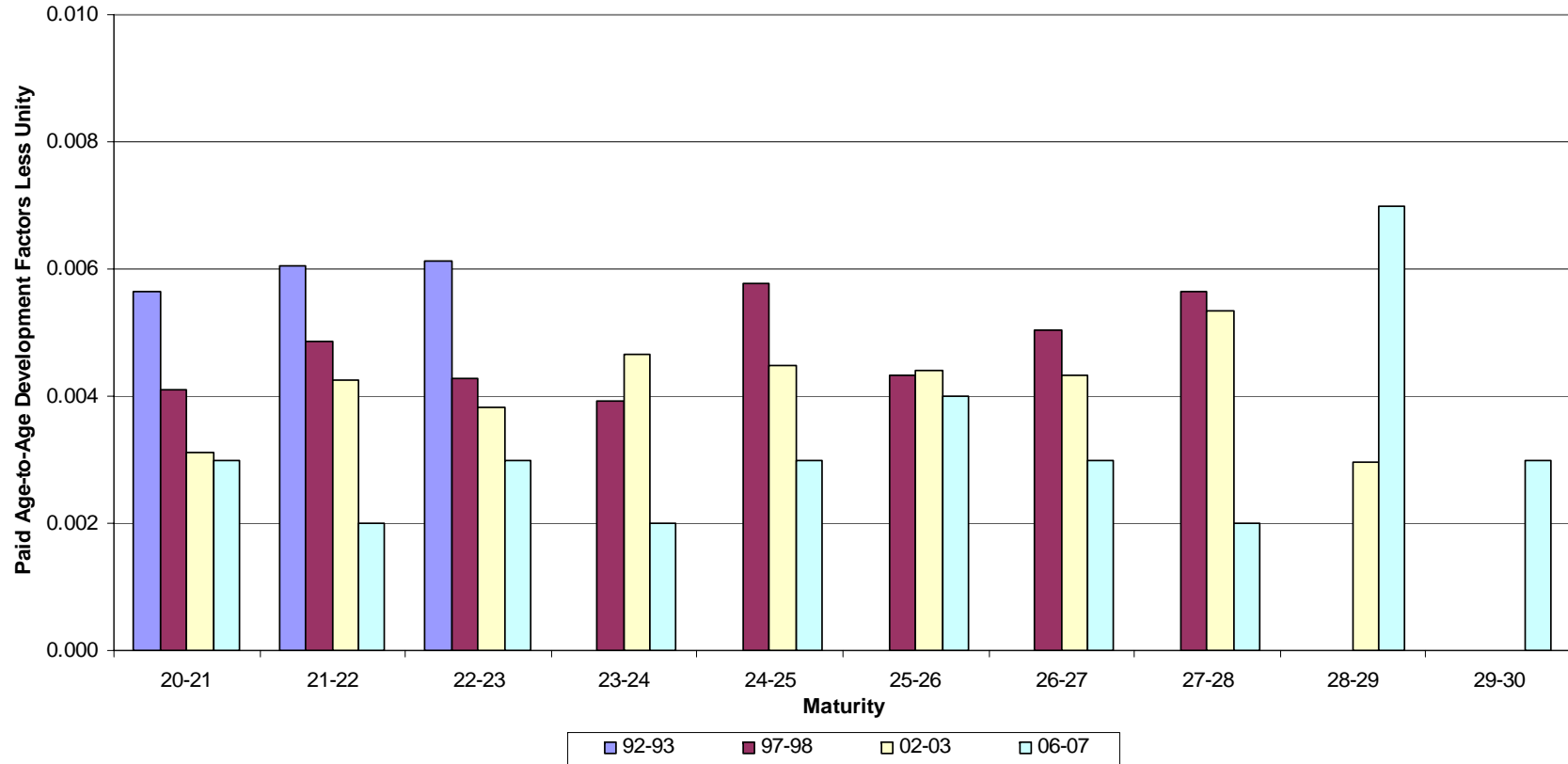
California Loss Development - Medical



Source: Workers' Compensation Insurance Rating Bureau of California



California Loss Development - Total



Source: Workers' Compensation Insurance Rating Bureau of California



2009 Casualty Loss Reserve Seminar

Workers' Compensation - How Long Is The Tail?
LOB-4

Presentation by

Tim Wisecarver, FCAS, MAAA, FCA, FIDM