

EMU Month-end Index Projections

Projected changes supportive for Germany

- **EMU Government Bond Index (EGBI):** We expect the effective duration of the EGBI to increase by a modest 0.03 years at the end of August. This would be its second-lowest extension in the last one year.
- **Weighted duration changes:** On a weighted duration basis, we expect Germany to extend the most (and the only country index to extend by more than its 5yr average on this basis).
- **EGBI extension in the context of the US and UK:** We expect the Treasury index to extend the most at the end of August, followed by the EGBI. The gilt index is projected to remain unchanged at the end of August.

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Figure 1. EGBI: Projected month-end duration change

| EGBI Effective Duration | | | Spectrum of duration changes over last year | | |
|-------------------------|---------------|---------------------|---|---------|-------------------------|
| Aug Index | Sep Index (e) | Duration Change (e) | Minimum | Maximum | Average Absolute Change |
| 6.98 | 7.01 | 0.03 | 0.02 | 0.16 | 0.07 |

Source: Citi Research

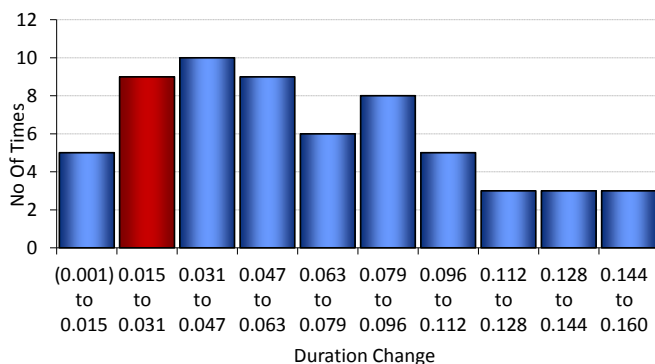
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End-August EGBI changes

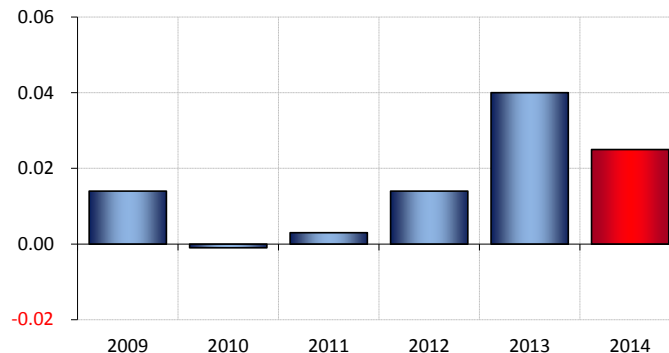
We expect the effective duration of the EGBI to increase by a modest 0.03 years at the end of August (Figure 1)¹. This would be its second-lowest extension in the last one year, however largely in line with past August changes (Figure 3).

Figure 2. Five-year distribution of month-end EGBI changes



Source: Citi Research

Figure 3. End-August EGBI changes over the last five years

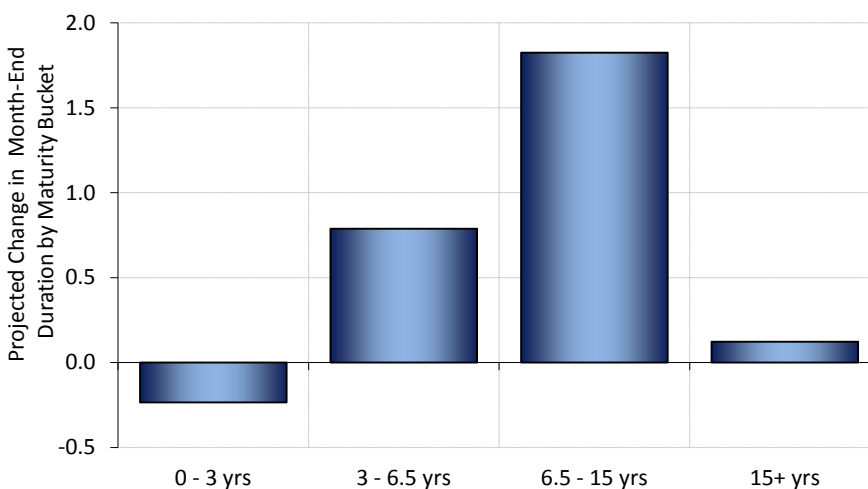


Source: Citi Research

Projected changes on the curve

The projected changes should be relatively supportive for the 10yr sector on the curve. The changes should also put flattening pressure on 2s10s (Figure 4).

Figure 4. End-August projected index changes by curve sector (weighted duration)



Source: Citi Research

€25bn of BTPs to drop out of the EGBI

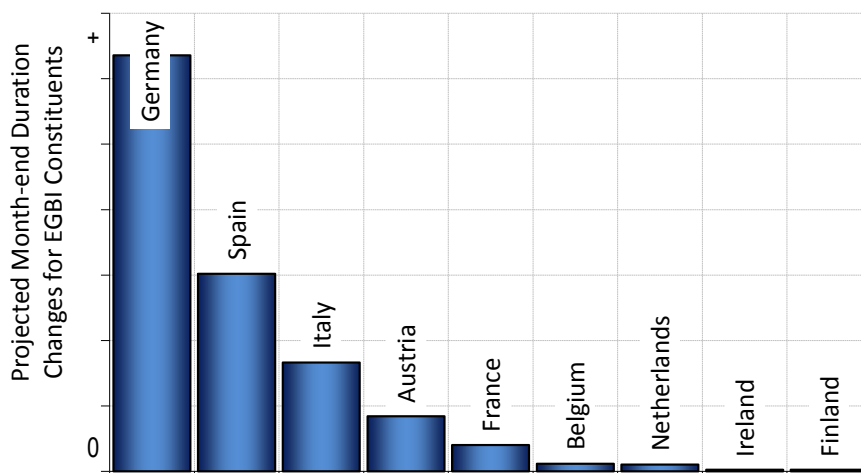
Issuance over the fixing period – 26 July to 25 August - will be eligible for inclusion in the index at the end of August. On the other hand, bonds that fall below one year of residual maturity on the last calendar day of the month are excluded from the index. Based on this criterion, only €25bn of the BTP 3.75% Aug15 will drop out of the EGBI at the end of the month.

¹ Based on Citi supply estimates. Supply is the main driver of duration changes, but other factors, e.g. yield level and curve shape, also affect the calculations and are subject to change.

Projected changes supportive for Germany

On a weighted duration basis, Germany stands to benefit the most at the end of the month, distantly followed by Spain and Italy. No country index is expected to contract at the end of August (Figure 5).

Figure 5. Weighted duration change at the end of August



Source: Citi Research

Detailed analysis of the changes

Figure 6 shows detailed analysis of end-August EGBI changes. Among the individual country indices that make up the EGBI, we expect the Italian index to extend the most. This would be the only index to extend more than its 5yr average (a 5yr z-score of 0.66), thanks to BTP Aug15 dropping out of the index.

For EGBI portfolios, it is the weighted duration change that is most relevant². On this metric, the German index is expected to extend the most this month.

Figure 6. Breakdown of end-August EGBI projections

| 18-Aug-14 | Aug Index | | Sep Index* | | Projected Change | | | Duration change range over last year (unweighted) | | | 5yr Z-score | |
|-------------|---------------------|----------|---------------------|----------|---------------------------------|------------------|--------------------|--|---------|-------------------------------|------------------------|----------------------|
| | % weight in EGBI | Duration | % weight in EGBI | Duration | Weighted Dur Change X 100 | Weight Change | Duration Change | Minimum | Maximum | Average Absolute Change | Unweighted duration | Weighted Duration |
| | | | | | | | | | | | | |
| Germany | 19.5 | 7.18 | 19.7 | 7.15 | 1.27 | 0.24 | (0.02) | (0.04) | 0.12 | 0.08 | (1.39) | 0.15 |
| Italy | 23.8 | 6.54 | 23.5 | 6.66 | 0.33 | (0.37) | 0.12 | 0.01 | 0.18 | 0.08 | 0.66 | (0.83) |
| France | 24.0 | 7.30 | 24.0 | 7.30 | 0.08 | 0.01 | 0.00 | (0.02) | 0.18 | 0.06 | (0.77) | (0.90) |
| Spain | 12.8 | 6.29 | 12.9 | 6.30 | 0.60 | 0.08 | 0.01 | (0.01) | 0.18 | 0.08 | (0.51) | (0.52) |
| Belgium | 6.5 | 7.70 | 6.5 | 7.70 | 0.02 | 0.00 | 0.00 | (0.01) | 0.45 | 0.09 | (0.64) | (0.76) |
| Netherlands | 6.2 | 7.45 | 6.2 | 7.45 | 0.02 | 0.00 | 0.00 | (0.04) | 0.33 | 0.10 | (0.50) | (0.69) |
| Ireland | 1.9 | 5.34 | 1.9 | 5.34 | 0.00 | 0.00 | 0.00 | (0.00) | 0.16 | 0.04 | (0.40) | (0.32) |
| Austria | 3.8 | 7.95 | 3.9 | 7.94 | 0.17 | 0.02 | (0.01) | (0.03) | 0.50 | 0.10 | (0.52) | (0.19) |
| Finland | 1.5 | 6.75 | 1.5 | 6.75 | 0.00 | 0.00 | 0.00 | (0.01) | 0.40 | 0.10 | (0.60) | (0.46) |

Source: Citi Research

² Weighted duration of a country is calculated as (market value of that country) * (effective duration) / (total market value of the EGBI). This is very significant for an EGBI portfolio manager as he tries to keep it unchanged through rebalancing at the month-end (within the bounds of his mandate).

Summary of pressures on individual country curves³

Figure 7 summarises the pressures on individual country curves from the projected index changes. Green arrows indicate support for prices relative to other points on the respective domestic curves (and red arrows point to downward price pressure). Double arrows indicate particularly strong pressure on that part of the domestic curve. White/transparent arrows indicate weaker price pressures. The underlying detail is shown below in Figure 8 to Figure 15.

Figure 7. Summary of price pressures on individual domestic curves

| | 2yr | 5yr | 10yr | 30yr | |
|---------|-----|-----|------|------|---------|
| Germany | | | | ↓ | Germany |
| Austria | | | | ↓ | Austria |
| Spain | | | ↑ | | Spain |
| Italy | | ↑ | ↑ | ↑ | Italy |
| | 2yr | 5yr | 10yr | 30yr | |

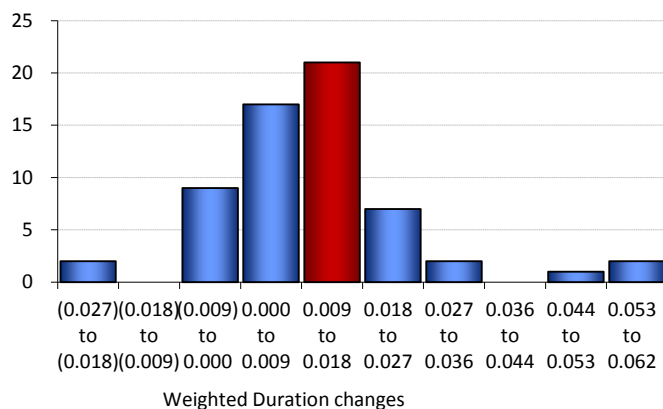
Source: Citi Research

Putting projected country changes in perspective

Below we show the distributions of weighted duration changes (charts on the left) and curve splits (charts on the right) of the projected changes. As the historical distributions show, projected changes this month are fairly small.

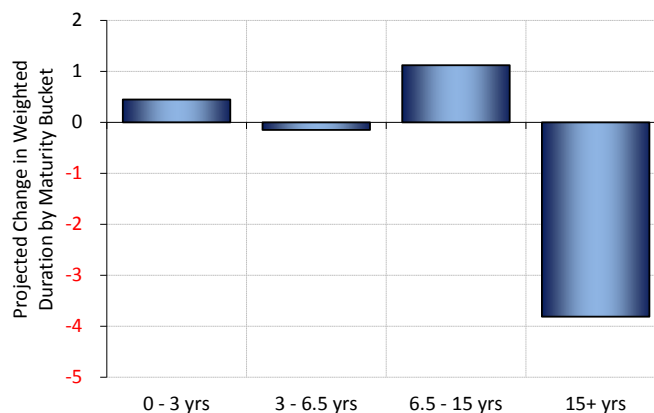
On domestic curves, we expect index changes to be relatively supportive for 10yr Italy (Figure 15) and Spain (Figure 13).

Figure 8. Germany: Distribution of month-end duration changes over the last five years (weighted duration)



Source: Citi Research

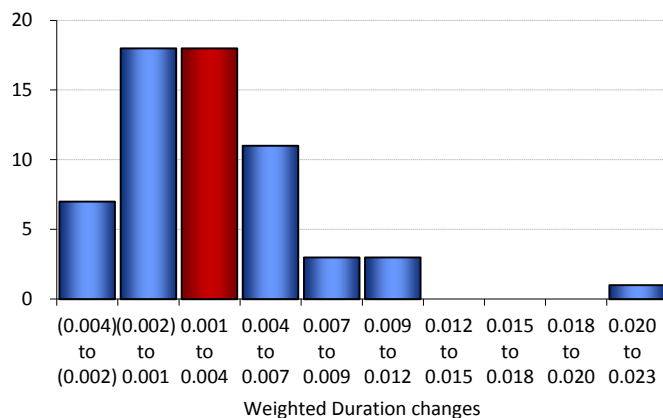
Figure 9. Germany: Maturity split of projected index changes



Source: Citi Research

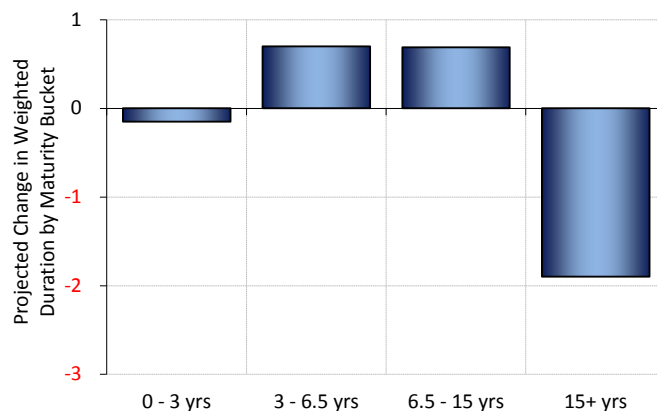
³Note that all these changes are on the domestic curve only, and should not be viewed as necessarily indicating cross-market opportunities.

Figure 10. Austria: Distribution of month-end duration changes over the last five years (weighted duration)



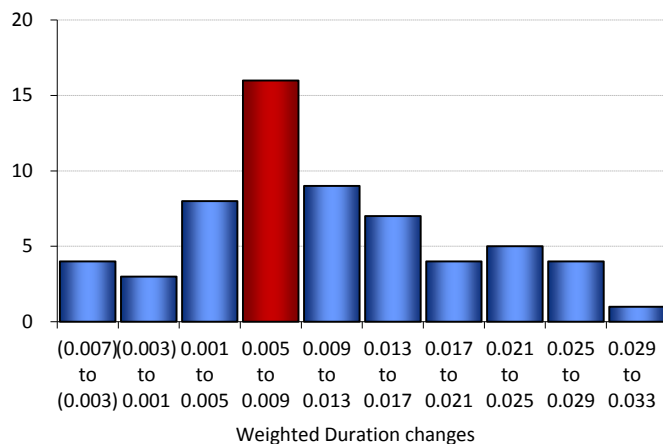
Source: Citi Research

Figure 11. Austria: Maturity split of projected index changes



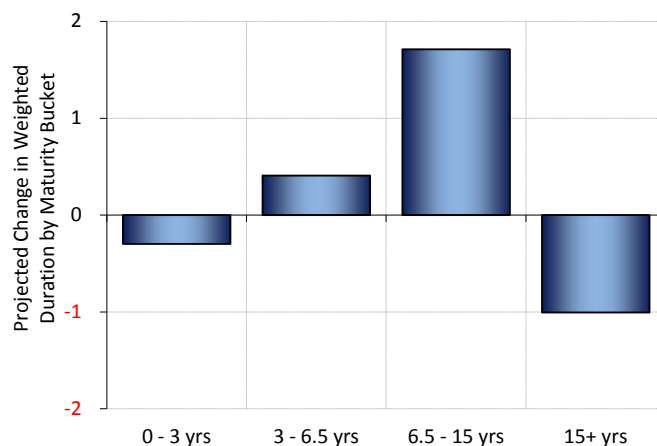
Source: Citi Research

Figure 12. Spain: Distribution of month-end duration changes over the last five years (weighted duration)



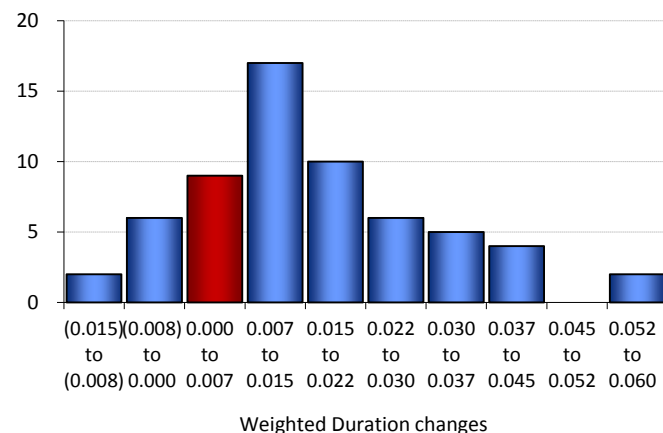
Source: Citi Research

Figure 13. Spain: Maturity split of projected index changes



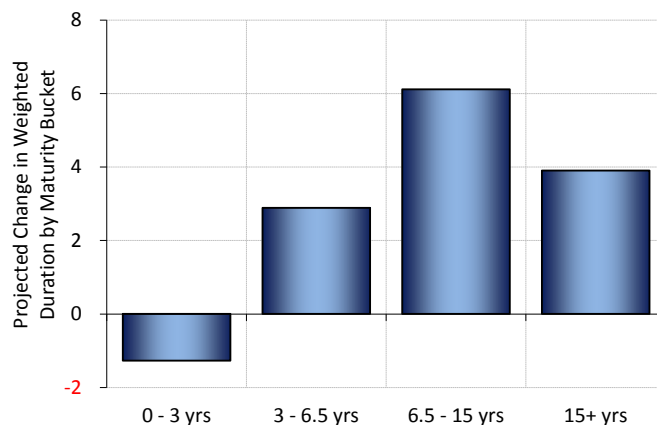
Source: Citi Research

Figure 14. Italy: Distribution of month-end duration changes over the last five years (weighted duration)



Source: Citi Research

Figure 15. Italy: Maturity split of projected index changes



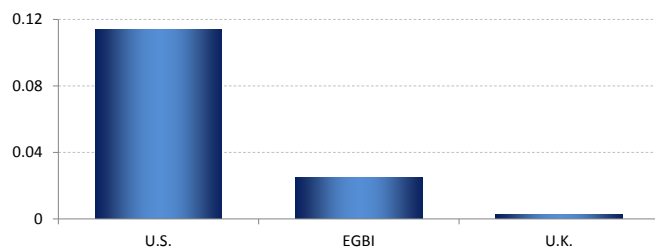
Source: Citi Research

EGBI extension in context of the US and UK

Here we look at the relative extensions in EMU, US and UK (Figure 16) and place them in the context of their respective 12-month ranges (Figure 17).

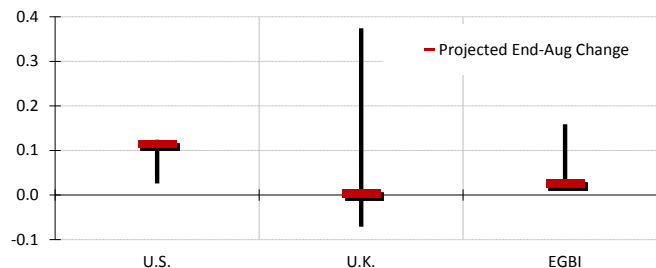
Among the three indices, the Treasury index is expected to extend the most at the end of August, followed by the EGBI. Please see [Citi Treasury Index August Compositional Adjustment](#) for details. Gilt issuance during the fixing month was largely duration neutral in the absence of any long-end conventional supply and the gilt index is projected to remain unchanged in August.

Figure 16. Relative extensions in EMU, US and UK



Source: Citi Research

Figure 17. Projected duration changes vs 12-month range



Source: Citi Research

As Figure 18 shows in detailed breakdown of the projected changes, only the Treasury index is expected to extend more than its 5yr average among the three indices.

Figure 18. Details of month-end changes in EMU, US and UK

| 18-Aug-14 | Aug Index | Sep Index* | Projected Change | 5yr Z-Score | Duration change range over last year | | |
|-----------|-----------|------------|------------------|-------------|--------------------------------------|---------|-------------------------|
| | | | | | Minimum | Maximum | Average Absolute Change |
| EGBI | 6.98 | 7.01 | 0.03 | (1.01) | 0.02 | 0.16 | 0.07 |
| U.S. | 5.19 | 5.31 | 0.11 | 1.40 | 0.03 | 0.12 | 0.08 |
| U.K. | 9.98 | 9.98 | 0.00 | (0.24) | (0.07) | 0.37 | 0.09 |

Source: Citi Research

Appendix A-1

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