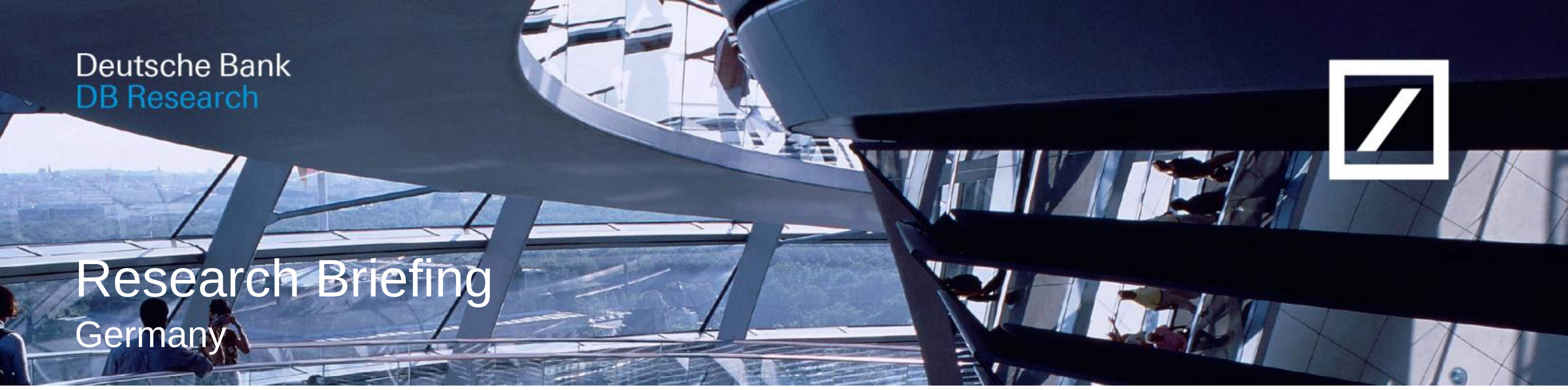

Debt structure of the federal states

Capital market debt gaining importance

March 13, 2012

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The debt ratio of the Länder (constituent federal states) has risen further in the last few years. Regional differences are considerable, however. This applies to both the scale as well as the type and maturity of debt and thus its structure.

Whereas in the past the Länder mainly financed themselves by borrowing from credit institutions, financing via capital market paper has become much more important in the meantime. The volume of bond issuance by the *Länder* has risen to over EUR 300 bn (quintupling of the nominal value in ten years). Loans currently account for only roughly 50% of the debt. There are considerable differences between the *Länder* regarding the share of bonds and loans, however.

80% of the funds lent by the credit institutions are long-term. Likewise, the majority of bonds issued are long-dated. However, the share of shorter-dated bonds has risen. The share of capital market paper in respective *Länder* debt recently ranged between 10% in Saxony and 70% in Hesse.

The maturity of loans and debt securities differs considerably between the *Länder*. In Rhineland-Palatinate, Bremen and North Rhine-Westphalia, the term to maturity was less than one year for 20% of the total debt (as of the end of 2010). In Bavaria, this share was only half the size. The difference is similar when it comes to the floating-rate share of total debt. In Bremen, floating-rate paper recently made up 1/3 of total debt, compared with only roughly 1% in Thuringia.

True, the spread between Länder bonds and comparable federal bond issues and between the Länder is not particularly large, but it is appreciable. Despite the joint liability system, different assessments regarding the credit rating and thus the fiscal situation of the individual states certainly are factors besides important aspects such as the liquidity of the market and the general risk appetite. From an economic point of view, this is positive as it increases the incentive to conduct sound fiscal policy and the market thus has a disciplinary effect.

Both on the revenue as well as on the expenditure side, the Federation and the *Länder* are linked by a complex division of powers and responsibilities. Despite their wide-ranging autonomy the *Länder* have, on the one hand, hardly any means of making quantitatively significant, autonomous decisions about the level of tax revenues. And, on the other, the expenditure that has arisen from the precepts of the Basic Law (for example, in the areas of internal security and education & culture) leads to ongoing spending requirements that cannot be altered at will via autonomous decisions within the *Länder*.

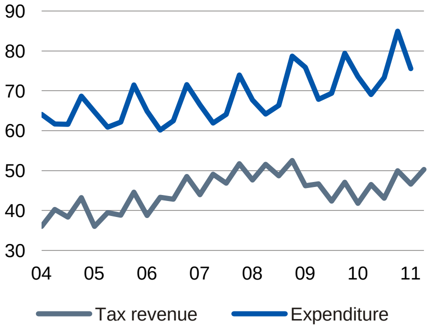
In addition, the majority of public administration (which also includes fiscal administration) is in the hands of the *Länder*. However, the *Länder* have enjoyed (to date) very wide scope at least when it comes to borrowing. All of this has led to a situation where in some *Länder* a major share of expenditure has been financed by new borrowing. In the past, most debts were taken on in the form of direct loans from credit institutions. The importance of capital market borrowing has increased strongly, however, even though the *Länder* make use of such instruments to varying degrees, funding themselves for example by issuing bonds (usually in the form of *Landesschatzanweisungen* and *Landesobligationen*). What is the structure of the debt, and does it for example display particular patterns?

Looking at this issue from the revenue side (and thus from the liquidity side), the cash flow of tax revenues initially lands in the coffers of the *Länder* as the relevant body responsible for administering taxation. Customs duties and certain consumption taxes, by contrast, are administered and initially received by the customs authority, i.e. the Federation. The *Länder* then pass on the tax revenues to the Federation and the municipalities in accordance with certain allocation formulae. In terms of (short-term) liquidity, the *Länder* are therefore in a more comfortable position than the Federation. Drawing direct correlations between this and financing requirements (e.g. short-term loans), is difficult, however.

Looking not only at total tax revenue but also total expenditure at the *Länder* reveals that they follow a regular pattern. Peaks in expenditure tend to occur in the fourth quarter (chart 1), while peaks in income tax come in the second and fourth quarters (chart 5). The volume of tax receipts does, however, fluctuate considerably in some cases The development of (gross) income tax revenue at the *Länder* level for example is correlated more or less strongly with the economic cycle (GDP; charts 2 and 3), which hardly comes as a surprise. As far as total tax revenues are concerned, the correlation is very mixed, though. The large differences in the correlation between income tax and GDP as well as between total tax revenues and GDP in individual *Länder* are hard to explain at this juncture and cannot be solely due to the sales tax. As these are gross tax revenues, the tax distribution (including the *Länder* financial equalisation system) cannot actually be a factor either. The development in tax receipts, however, allows few conclusions to be drawn about the indebtedness of the *Länder* (and municipalities).

Expenditure and tax revenue peak in Q4 1

Quarterly expenditure and tax revenue (EUR bn), *Länder* tax revenue



Sources: DB Research, Bundesbank

Correlation between GDP and tax revenue 2

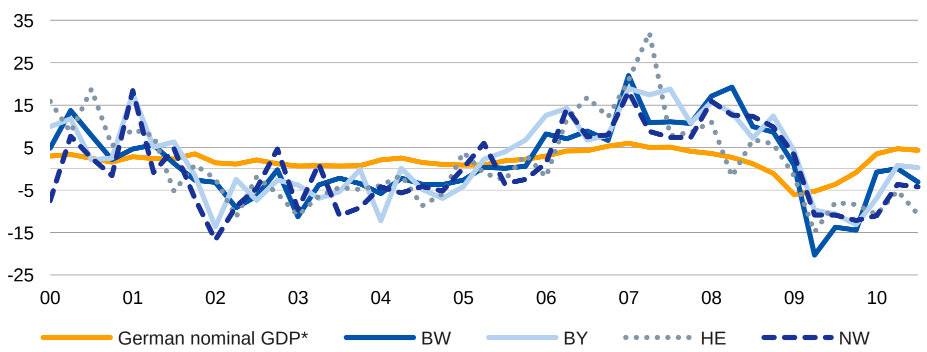
	Income tax relative to *Land* GDP*	All taxes relative to *Land* GDP*
BW	0.7302	0.6276
BY	0.5642	0.4159
BE	0.8040	0.2160
BB	0.4972	0.3346
HB	0.3917	0.4996
HH	0.3225	0.0029
HE	0.6208	0.4235
MV	0.5495	0.1059
NI	0.6221	0.7804
NW	0.7083	0.3321
RP	0.5366	0.5548
SL	0.2809	0.0634
SN	0.2566	0.4353
ST	0.5352	0.4809
SH	0.4422	0.6732
TH	0.2960	0.4341

*Correlation coefficients of the rates of change, 2000-2010, gross tax receipts (prior to distribution)

Sources: DB Research, Federal Statistical Office

Income tax receipts fluctuate considerably 3

Change (%) vs pre-year quarter, gross income tax receipts in respective *Land*

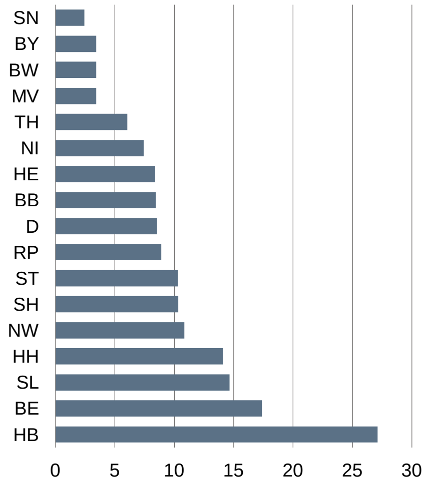


Sources: DB Research, Federal Statistical Office

Debt structure of the federal states

Per-capita debt - large variations 4

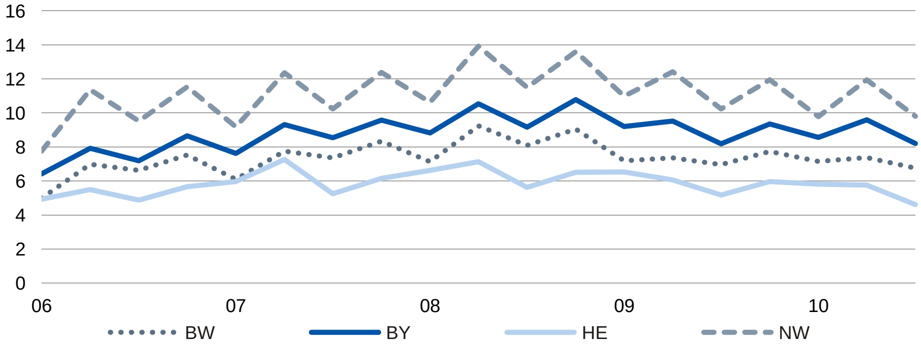
Per-capita debt of *Länder* and their municipalities (EUR '000), 2010



Sources: Federal Statistical Office, DB Research

Income tax revenues concentrated in Q2 and Q4 5

Quarterly gross income tax receipts of Federation/Land/municipalities in respective *Land** (prior to distribution), EUR bn

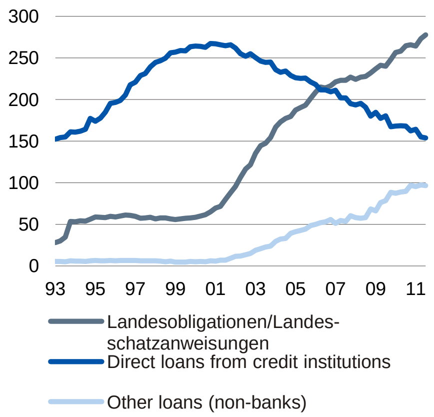


*Over 2/3 of gross income tax receipts in Germany are collected in these four *Länder*

Sources: DB Research, Federal Statistical Office

Fewer loans from banks 6

Länder debt by type (EUR bn)



Sources: Bundesbank, DB Research

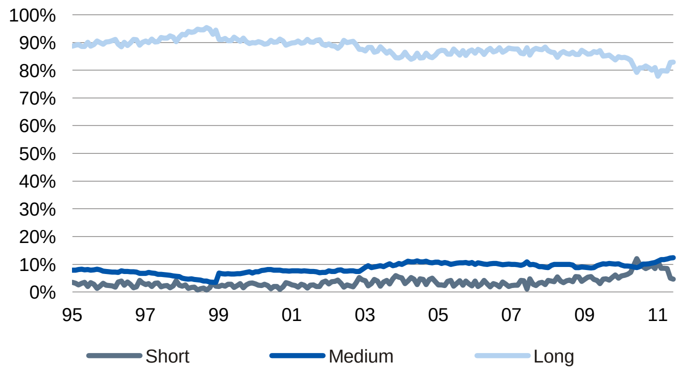
A *Länder* comparison reveals that there are very large differences between the debt levels of the individual states (chart 4, with municipalities for comparability of territorial states and city-states).[1] This also applies to the structure of the debt. In general the *Länder* avail themselves of two types of debt: loans and bonds. In the past loans were by far the predominant instrument, more recently increasing amounts of bonds have been issued (mostly in the form of *Landesschatzanweisungen* and *Landesobligationen*).

Importance of borrowing receding

Until the turn of the millennium the volume of borrowing by the *Länder* grew constantly, and since then it has been falling slightly. The share of loans in total debt has, however, fallen to 50% (charts 6 and 9). Furthermore, it can be seen that the volume and the share of direct loans from credit institutions are also declining sharply. The bank loans granted are predominantly of longer maturity (i.e. more than 5 years; charts 7 and 8) and the volume is also declining. Mortgage banks have lost their dominant role compared to Landesbanks, banks with special functions and commercial banks (charts 20-24, appendix).

Bank loans to *Länder* – long term! 7

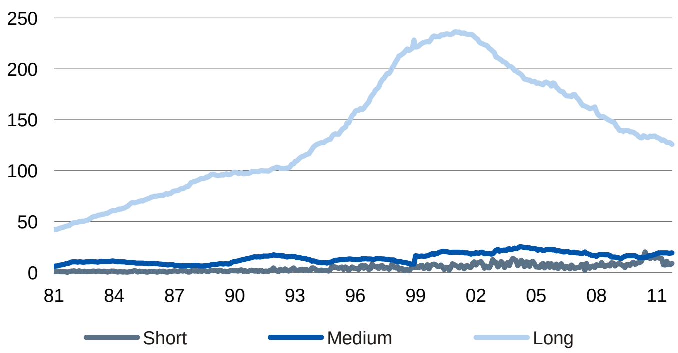
Direct loans from credit institutions, percentage according to maturity



Sources: DB Research, Bundesbank

Volume of long-term bank loans falling 8

Direct loans from credit institutions, volume according to maturity (EUR bn)



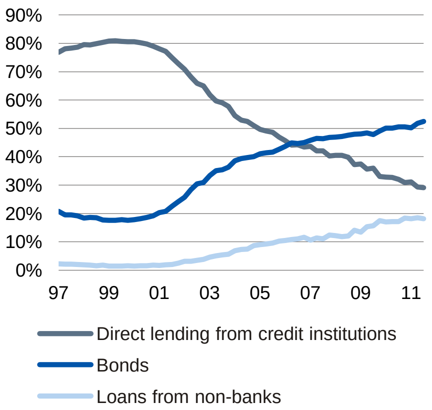
Sources: DB Research, Bundesbank

[1] For a detailed discussion, see Zipfel (2011). Finances of German *Länder*, Current Issues. Deutsche Bank Research. Frankfurt am Main.

Debt structure of the federal states

Loan share down to 50% | 9

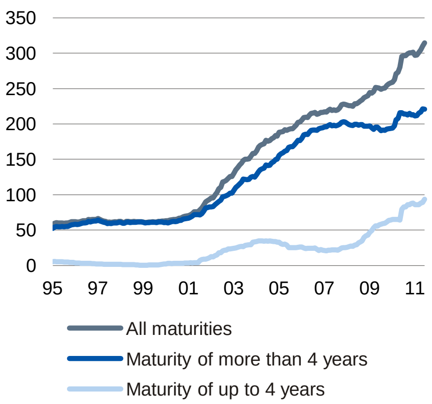
Respective share of total debt



Sources: Bundesbank, DB Research

Bonds increasingly popular | 10

Nominal value of Länder bonds outstanding (EUR bn)



Sources: Bundesbank, DB Research

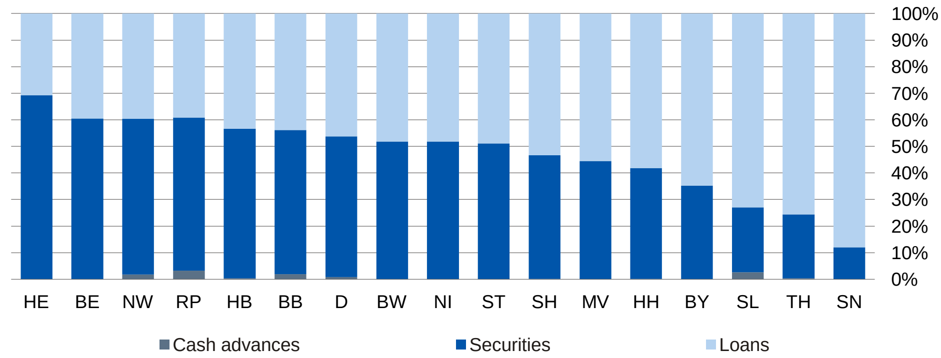
Bonds gaining importance

The growing debt of the *Länder* has increasingly been financed using capital market paper – such as bonds.[2] The *Länder* as a whole have only made extensive use of bonds since the turn of the millennium (charts 9 and 10). During the 1990s the nominal value of bonds outstanding averaged some EUR 50 bn (the value tripled between 1990 and 2000). Since then the volume has more than quintupled (to more than EUR 300 bn). This is also reflected in the *Länder* share of the total volume of public-sector bonds, which has doubled from nearly 10% to 20%.

A look at issuance activity (chart 12) shows that the *Länder* attempt to place as many bonds as possible right at the start of the year. This is probably due to the fact that the budget law allows a certain amount of borrowing which is then fixed for the whole of the year. The individual *Länder*, however, avail themselves of bonds to very differing degrees (chart 11). In 2010 Hesse was the *Land* that made the most active use of capital market paper, which constituted nearly 70% of debt at year-end. Some way behind came Berlin, North Rhine-Westphalia and Rhineland-Palatinate with nearly 60%. At the other end of the scale there was Saxony whose debt was financed via loans to the tune of nearly 90% as of the end of 2010.

Länder use of bonds and loans varies very widely | 11

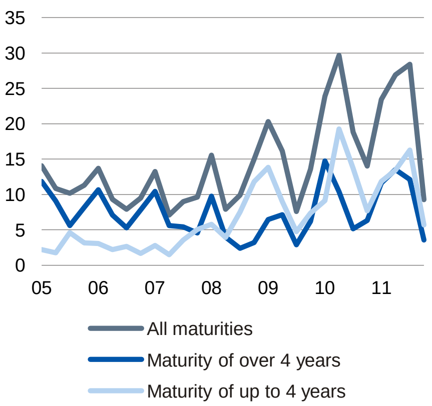
Respective share of total debt constituted by debt securities (Landesschatzanweisungen), loans and cash advances in the non-public sector (%), 2010



Sources: DB Research, Federal Statistical Office

Bonds mostly issued in Q1 | 12

Gross volume of *Länder* bond sales (EUR bn)



Sources: Bundesbank, DB Research

Since 1999 the volume of shorter-dated bonds (i.e. with maturities of less than 4 years) has risen across all the *Länder* (chart 13). Indeed the share of these bonds climbed to nearly 30%. 2010 saw the issuance of primarily shorter-dated bonds. For all the *Länder* combined 75% of their bonds had maturities of up to 5 years (chart 14). Though, comparing the *Länder* with each other also reveals major differences (see charts 25-29 in the appendix for detailed information).

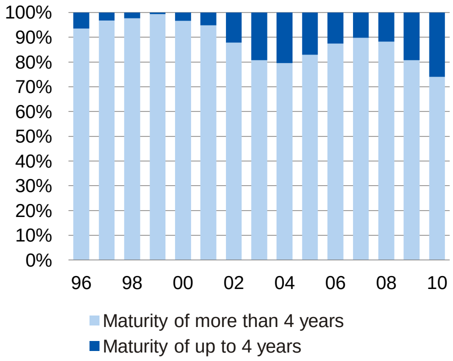
The yields on *Länder* bonds not only differ between the individual states – albeit to a relatively small degree – but also feature premia to federal bonds. With the increase in bond issuance since 2000 the yield spread to federal bonds narrowed and only started to widen again when the financial market crisis

[2] The data used in this report is sourced from the Federal Statistical Office, the Bundesbank and Bloomberg. Particularly with bonds there are in some cases considerable differences between these data sources. These are presumably due at least in part to the distinction drawn between debt securities and loans. The Federal Statistical Office published completely revised debt level statistics (Fachserie 14 Reihe 5) at the end of September (and a corrected version at the end of November). Both the data collection method and scope were converted and also expanded. This annual publication therefore provides the most comprehensive presentation of the debt situation of Germany's different levels of government.

Debt structure of the federal states

Länder bonds are shorter dated 13

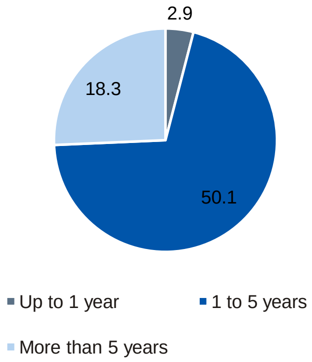
Respective maturity class as a percentage of all bonds outstanding (nominal value)



Sources: Bundesbank, DB Research

Maturities of *Länder* bonds issued in 2010 14

Issuance of money and capital market paper of all *Länder* (EUR bn), 2010



Sources: DB Research, Federal Statistical Office

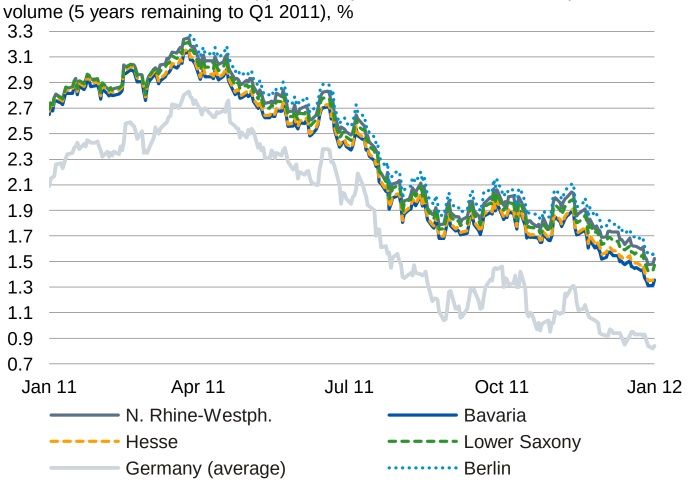
began.[3] According to a Bundesbank assessment made in 2008 the main reasons for this were not only that *Länder* bonds were less liquid but also that market participants were generally risk averse. The former is illustrated by the mostly slender premia for joint *Länder* bonds ("Jumbos"). By contrast, growing risk aversion results in generally higher yields for holding *Länder* bonds. Nevertheless, another factor – despite the mutual assistance obligation – is the credit rating, i.e. the assessment of the fiscal situation and of the debt level among other things.

Unfortunately, detailed (i.e. for each individual *Land*), more recent analyses of the Bundesbank data set for all *Länder* bonds are not available. Serving as a kind of proxy in a comparative example below we therefore present individual, selected traded bonds of various *Länder* with virtually the same maturity and the same volume (with a term to maturity of 5 years to Q1 2011 and a volume of around EUR 1 bn; charts 15, 16 and 17). What we find are definitely appreciable differences between the *Länder* and between the *Länder* and the Federation (average yield on 5-year federal bonds). The spreads between federal and *Länder* bonds in the case of Berlin and North Rhine-Westphalia in the example shown amount to more than 100 basis points. The premium for Bavaria and Hesse is nearly 40 basis points lower. The overall increase in the premium of *Länder* bonds to federal bonds in Q2 and Q3 2011, however, clearly shows the currently strong demand for safe federal bonds.

Furthermore, the *Länder* have for some time been issuing bonds not only in euro, but also for example in Swiss francs or Japanese yen. The share of such bonds is low, though – the average for all *Länder* was just under 3% at last count (2010). Many *Länder* make hardly any use of them. At the end of 2010 the largest portfolios of non-euro-denominated bonds were held by Brandenburg with 7% and North Rhine-Westphalia with 6%. In Hesse (more than 3%) and Berlin (more than 2%) the levels are only half as much, while in the other *Länder* non-euro-denominated bonds are virtually nonexistent.

Yield comparison for traded federal and *Länder* bonds 15

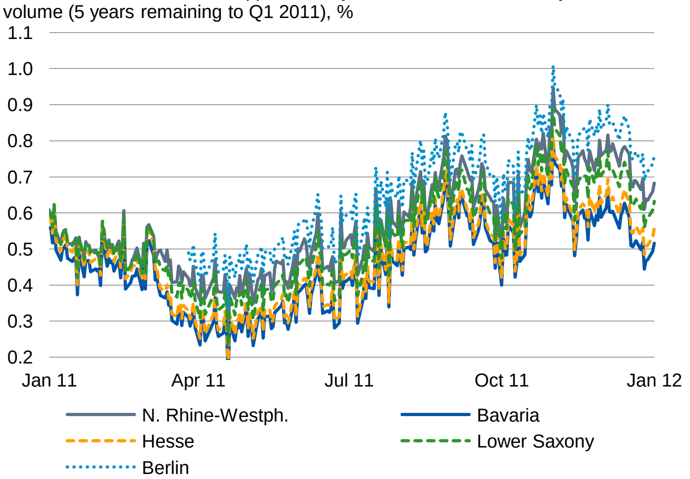
Yield on selected bonds with approximately the same term to maturity and volume (5 years remaining to Q1 2011), %



Sources: DB Research, Bloomberg (as at January 2012)

Spreads of traded *Länder* bonds over traded federal bonds 16

Yield on selected bond with approximately the same term to maturity and volume (5 years remaining to Q1 2011), %



Sources: DB Research, Bloomberg (as at January 2012)

3 See Bundesbank (2008). The market for federal state bonds. In Bundesbank Monthly Report. June 2008.

Debt structure of the federal states

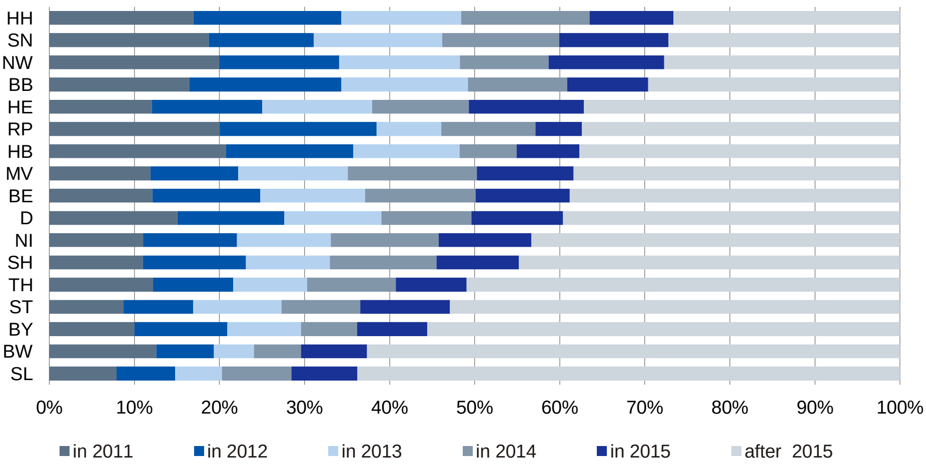
Capital market debt (traded bonds) 17

	Total bonds issued	Average coupon	Average term to maturity
	EUR bn	%	Years
BW	17.4	3.9	4.7
BY	10.2	3.4	3.8
BE	37.8	3.4	3.3
BB	10.5	3.6	3.2
HB	7.6	0	1.6
HH	5.4	2.6	2.3
HE	27.4	3.2	4.2
MV	0.8	4.5	5.7
NI	31.8	3.4	3.5
NW	78.3	3.1	3.8
RP	19.8	3	3.3
SL	1.9	2	3
SN	0.9	3.9	3.6
ST	10.2	4.1	4
SH	8.5	3.2	3
TH	2.4	3.5	3

Source: Bloomberg (as at January 2012)

Maturities of *Länder* debt 18

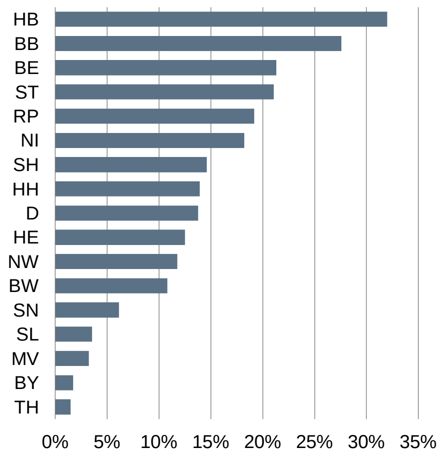
Share of total debt (securities and loans, excluding cash advances), as at end-2010



Sources: DB Research, Federal Statistical Office

Very wide variations in floating-rate share 19

Floating-rate share of total debt for each *Land**, 2010



*Securities and loans (excluding cash advances)

Sources: DB Research, Federal Statistical Office

There certainly are major differences between the financing of the *Länder* with regard to maturities and type of debt. This applies to both bonds and loans. As of December 31, 2010, not only in Bavaria and Baden-Württemberg, but also in Saarland around 60% of debt (loans and bonds) was not due for redemption until after 2015 (chart 18). The debts of Brandenburg, North Rhine-Westphalia, Saxony and Hamburg, by contrast, are very much shorter-dated. In these *Länder* 60% of debt will mature before 2015. The portfolios of loans and securities were particularly short-dated in Rhineland-Palatinate, Bremen and North Rhine-Westphalia, where 20% of the debt was financed with instruments due for redemption in up to one year.

Some of the *Länder* whose portfolios of loans and bonds are more short term in nature also have a high proportion of floating-rate paper (chart 19). In the case of Bremen the figure is nearly 1/3 of total debt, but in Brandenburg, Saxony-Anhalt and Rhineland-Palatinate, too, the floating-rate share of total debt is much higher than in the other *Länder* at around 20%.

Conclusion

Unity in diversity is how one could neatly sum up the structure of *Länder* debt and financing. There is, however, a clear trend towards more financing via capital market bonds. Of major significance here is the feature of solidarity in the federal state, i.e. joint liability of the Federation and the *Länder*. The *Länder* benefit from this – above all from the good credit rating of the Federation – when they tap the capital market for funding. However, the view that is becoming increasingly established is that the fiscal situations of the individual *Länder* cannot be treated completely the same after all and that assistance from the federal level (especially after the financial equalisation arrangement expires in 2020) probably cannot be expected to the same extent as has been the case up until now. The introduction of the debt brake by 2020 is to be regarded as a positive step in economic terms. This is the only way to maintain the incentive to conduct a sustainable and sound fiscal policy at the *Länder* level. The recent demand for joint (and severally liable) bonds issued by the Federation and the *Länder* should therefore be regarded with concern. Individual efforts must pay off – they are rewarded by investors in the capital markets.

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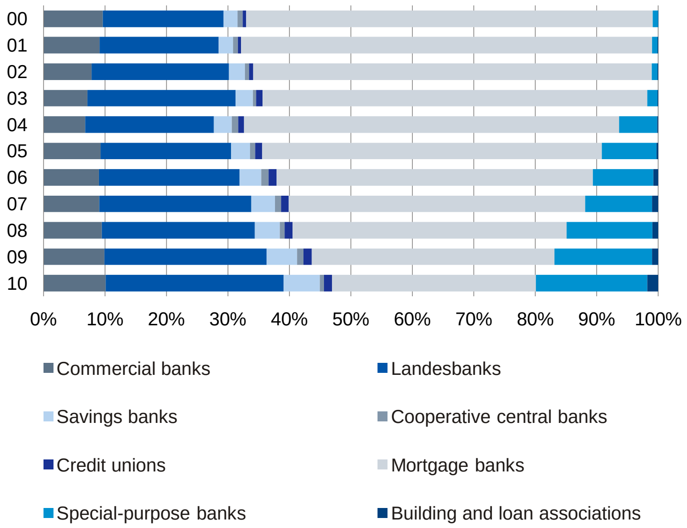
Debt structure of the federal states

(Book) loans to *Länder* of all maturities 20

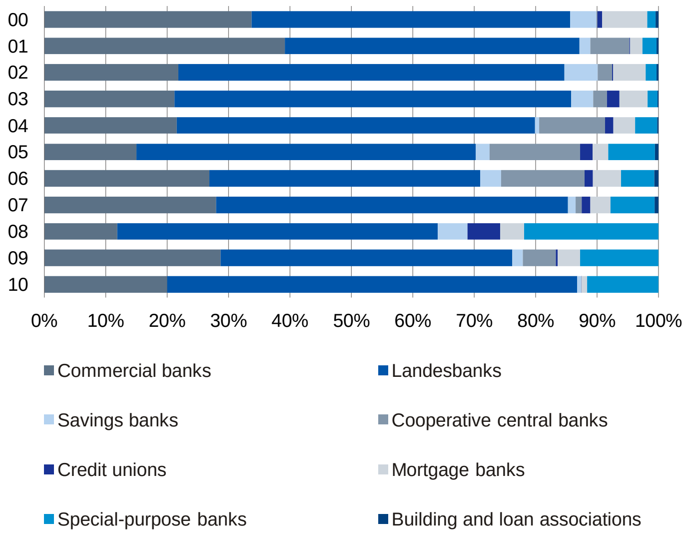
Respective banking group share of total disbursement (%), annual figures



Sources: DB Research, Bundesbank

(Book) loans to *Länder* with a maturity of up to 1 year 21

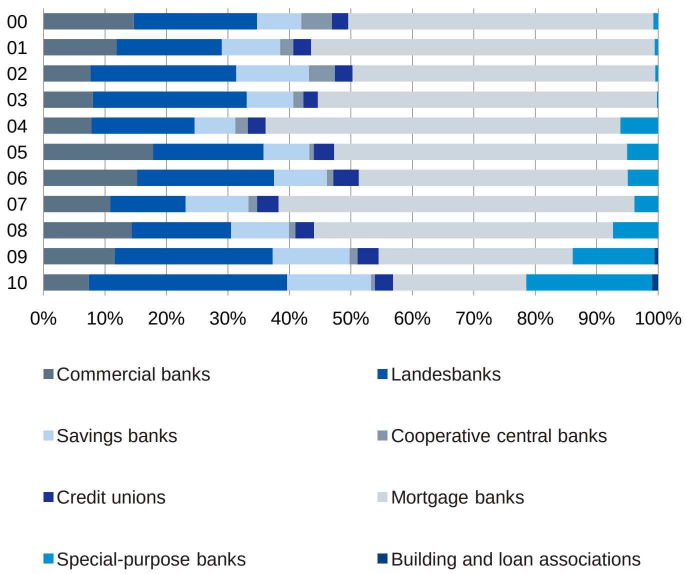
Respective banking group share of total disbursement (%), annual figures



Sources: DB Research, Bundesbank

(Book) loans to *Länder* with a maturity of over 1 year and up to 5 years 22

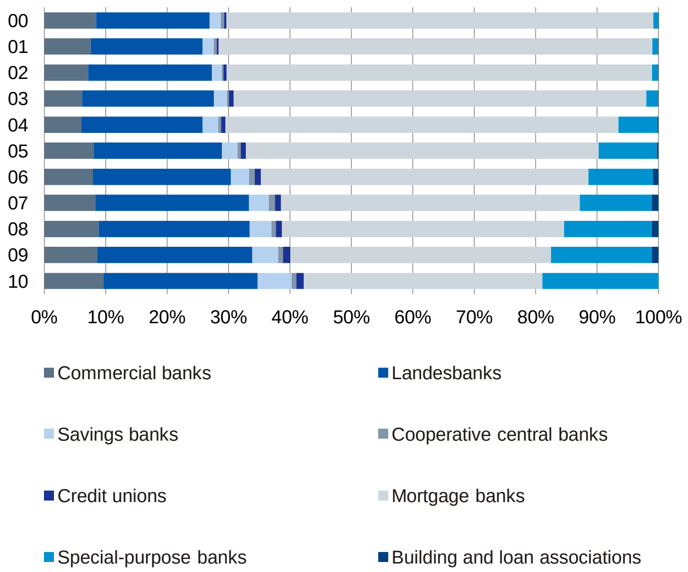
Respective banking group share of total disbursement (%), annual figures



Sources: DB Research, Bundesbank

(Book) loans to *Länder* with a maturity of over 5 years 23

Respective banking group share of total disbursement (%), annual figures

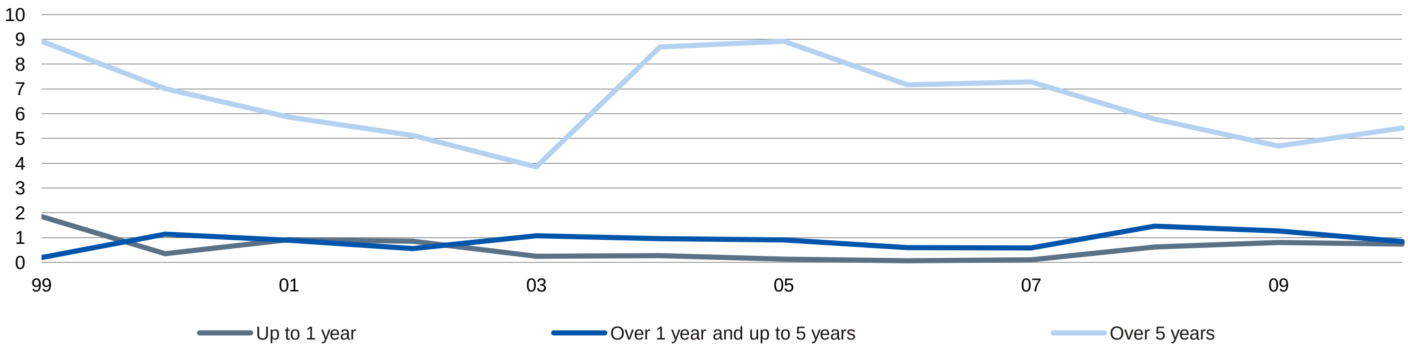


Sources: DB Research, Bundesbank

Debt structure of the federal states

(Book) loans by big banks to *Länder* by maturity 24

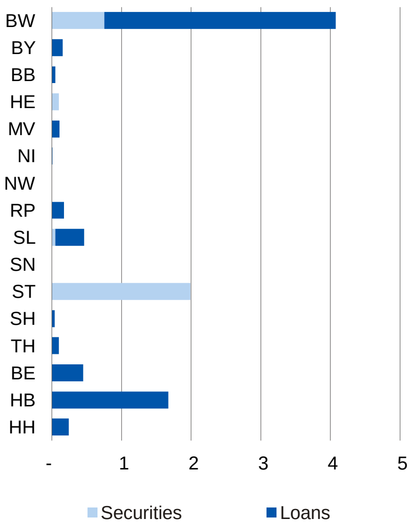
EUR bn, annual figures



Sources: Bundesbank, DB Research

Borrowing with a maturity of up to 1 year in 2010 25

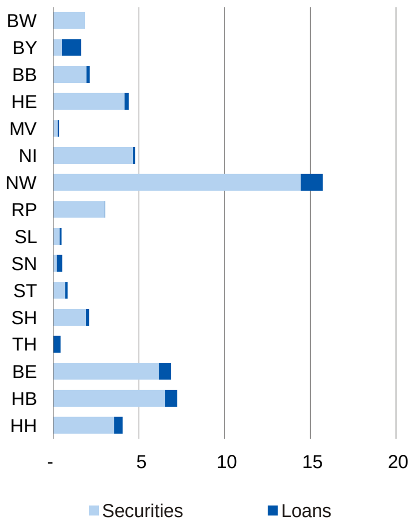
Debt securities and loans in the non-public sector (EUR bn)



Sources: Federal Statistical Office, DB Research

Borrowing with a maturity of over 1 year and up to 5 years in 2010 26

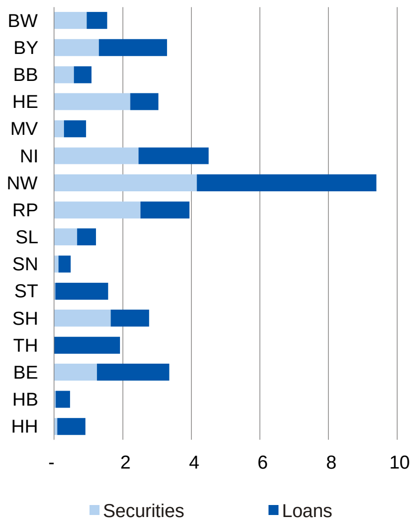
Debt securities and loans in the non-public sector (EUR bn)



Sources: Federal Statistical Office, DB Research

Borrowing with a maturity of more than 5 years in 2010 27

Debt securities and loans in the non-public sector (EUR bn)

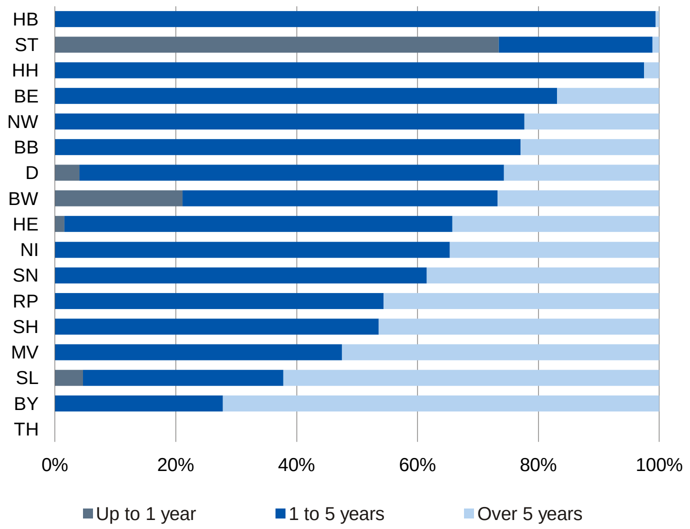


Sources: Federal Statistical Office, DB Research

Debt structure of the federal states

Debt securities in 2010 — 28

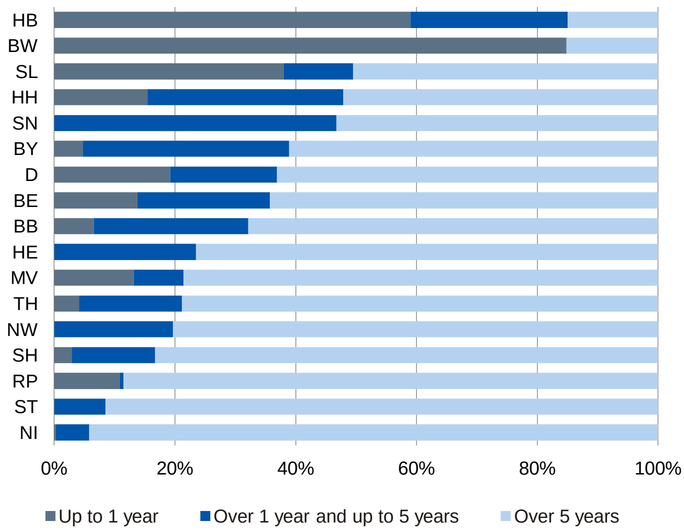
Money and capital market paper, share of maturity class per *Land* (%)



Sources: DB Research, Federal Statistical Office

Loans in 2010 — 29

Loans in the non-public sector, share of maturity class per *Land* (%)



Sources: DB Research, Federal Statistical Office

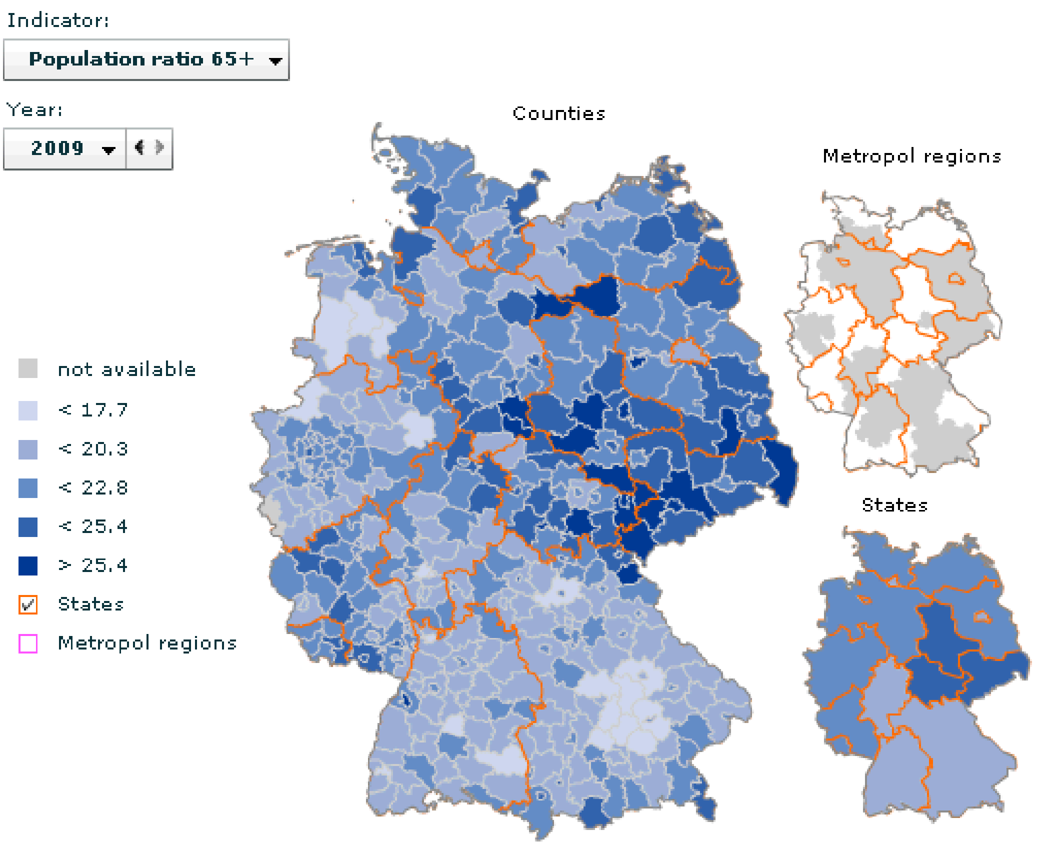
Traded Länder bonds by maturity — 30

EUR m	2012	2013	2014	2015	2016	2017	2018	2019	2020	>2020
BW	2,350	845	2,000	3,325	2,881	1,000	2,100	1,250	150	1,494
BY	1,600	1,542	1,085	1,075	1,110	1,250	975	50	1,250	228
BE	5,707	6,605	6,616	6,440	4,937	3,675	919	250	0	2,636
BB	2,023	2,808	1,337	1,120	1,505	100	247	60	160	1,165
HB	2,000	2,750	1,900	900	0	0	0	0	0	0
HH	1,375	1,080	952	1,575	50	50	161	130	0	0
HE	2,100	4,076	4,700	4,765	3,899	2,089	650	0	2,150	2,971
MV	0	250	150	0	0	100	0	0	0	256
NI	4,550	4,550	4,800	5,225	5,035	2,500	2,835	1,175	0	1,150
NW	12,529	13,480	14,106	13,381	9,231	2,925	3,667	1,950	510	6,535
RP	4,660	4,500	2,686	942	1,338	1,800	1,497	835	0	1,502
SL	185	361	350	500	215	285	20	0	0	0
SN	150	50	307	100	20	95	100	10	0	100
ST	1,131	1,582	1,472	1,642	1,395	1,531	105	0	70	1,250
SH	1,225	1,282	1,783	1,650	1,435	800	121	213	0	0
TH	500	200	500	500	0	600	0	0	50	0

Source: Bloomberg (as of January 17, 2012)

Germany at a glance

The online resource (on the internet exclusively for clients) Germany at a glance provides access to economic data at district/ county and state level: some of the main topics include public finances, economic strength, labour market, consumption, business structures, demographics and education.



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