

## Institutional Detail Swiss Centralized Refinancing Companies

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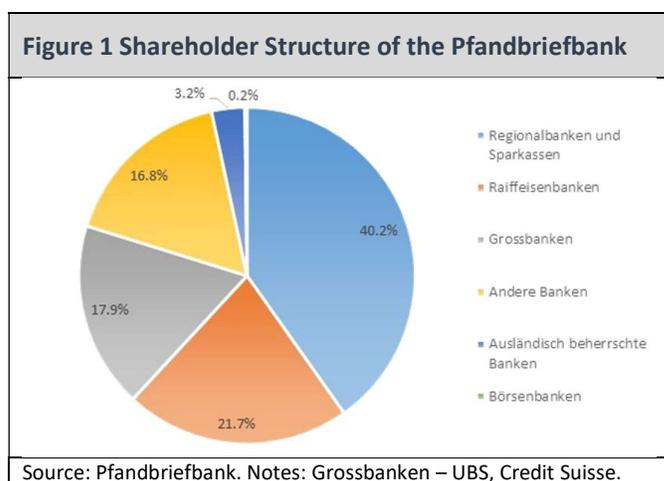
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### Business Model and Legal Basis

**Business model:** the two Swiss refinancing companies issue covered bonds (Swiss Pfandbrief®) backed by a pool of covered refinancing loans (Pfandbrief loans) to banks with statutory backing by mortgage loans. Operations are limited to the aggregation of long-term funding demands. Hence, Pfandbrief loans and Pfandbriefe issued must be strictly matched and operational risk and costs must be minimized.

The refinancing companies serve two disjunct groups of banks:

- Pfandbriefzentrale schweizerischer Kantonalbanken. The 24 Kantonalbanken are publicly owned regional banks. The largest member, Zuericher Kantonalbank, operates the refinancing company via management contract on behalf of all members.
- Pfandbriefbank schweizerischer Hypothekarkreditinstitute. Membership includes 317 commercial banks, private banks, regional and co-operative banks (Raiffeisenbanken) with loans. Pfandbriefbank is a specially licensed entity.



Both entities are established as joint stock companies (Aktiengesellschaft), even though the enabling law also permits the cooperative charter.

Membership is restricted by law and statutes of the Pfandbriefbank to lenders with a minimum share of mortgage loans to total assets (in the case of Pfandbriefbank 10% to define the term 'Hypothekar-kreditinstitut'<sup>2</sup>). Lending to non-members is permitted by law under tightened conditions established by law. The members affiliated to both centralized issuers

hold a market share of around 98 % of the mortgage business of Swiss banks.

**Legal basis:** the two companies are established under the Swiss Pfandbriefgesetz of 1930 (latest reform 2015), are specially licensed by the Swiss Federal Council and supervised by the Swiss

<sup>1</sup> Much of this short study relies on work undertaken by Dr. Robert Horat, CEO of the Pfandbriefbank, who also reviewed and commented it.

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<sup>2</sup> The law demands 60%, but permits derogations.

Financial Market Supervisory Authority (FINMA). They do not possess a universal banking license. The scope is strictly limited to Pfandbrief business related tasks.

The law (Pfandbriefgesetz) is structured similarly to other European covered bond legislation in defining eligible assets, ring-fencing, risk management and insolvency mechanisms. It also defines capital requirements separate from Swiss universal banks (see below). Additional legal documents are the implementing regulation (Pfandbriefverordnung) of 1931 and the regularly updated statutes and the valuation regulations of the two Pfandbrief issuers.

### Cover Assets

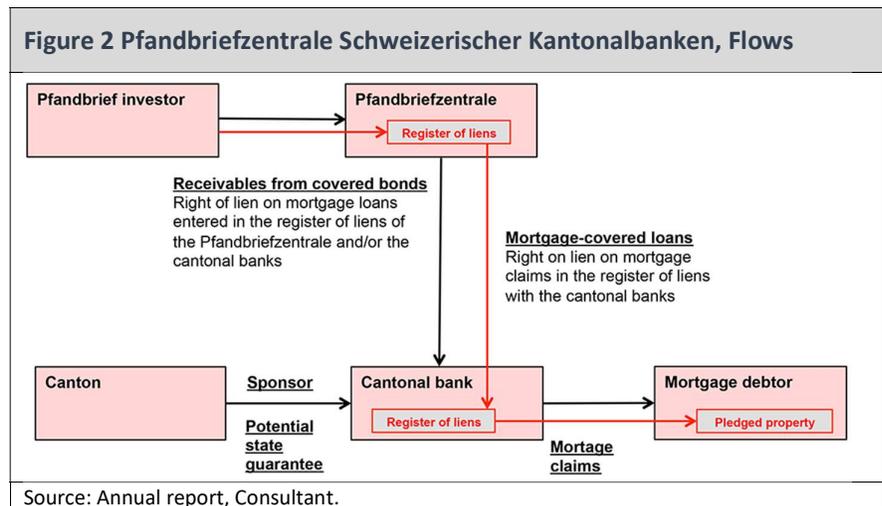
Eligible mortgage assets: the regulation differentiates between the lending value and the cover (funding) value. The entire mortgage loan is pledged, i.e. the loan amount recorded corresponds to the pledged lending value.<sup>3</sup> According to the master loan agreements closed by Pfandbriefbank with its members, only residential mortgage loans up to a total loan-to-value up to 80% of are accepted in the cover pool.

The cover value corresponds to the pledged lending value, but not more than 2/3 of the collateral value of the property. Eligible by law are mortgage loans for residential (cover value up to 66% of lending value<sup>4</sup>) and commercial (cover value up to 50% of lending value) real estate uses, tourism uses (cover value 50%/33% of lending value<sup>5</sup>) as well as agricultural and forestry land uses.

At Pfandbriefbank, the cover values are both verified and re-calculated every quarter with the help of a hedonic property valuation model (see below). Pfandbriefbank also standardizes property valuation techniques for income generating properties.

In practice, the cover pool consists only of residential real estate, which in Switzerland includes both non-income-generating loans for single-family and condominium housing and income-generating loans on entire multi-family residential buildings.<sup>6</sup>

Overcollateralization requirements: In the case of Pfandbriefzentrale, member banks must pledge mortgaged properties with a value of 115% of the loan amount as collateral for the Pfandbrief loans. The interest income from the mortgages set aside must be at least 10% higher than the interest payable on the Pfandbrief loans.



<sup>3</sup> I.e. split loans with total LTV > funding LTV are entirely part of the cover.

<sup>4</sup> Including residential buildings with up to 30% commercial use.

<sup>5</sup> 50% for vacation homes, 33% for vacation apartments.

<sup>6</sup> An example report for the pool composition is given in:

[http://www.pfandbriefbank.ch/content\\_DE/04\\_Publikationen/03\\_Pfandbriefbank\\_Pool/01\\_Englisch/20171231%20Pfandbriefbank\\_Pool.pdf](http://www.pfandbriefbank.ch/content_DE/04_Publikationen/03_Pfandbriefbank_Pool/01_Englisch/20171231%20Pfandbriefbank_Pool.pdf)

The Pfandbriefbank requires overcollateralization of 108% (nominal as well as interest). The lower figure compared to Pfandbriefzentrale as corresponding to lower risk due to the presence of a centralized electronic cover register at the Pfandbriefbank. The minimum values for overcollateralization and interest coverage are defined by FINMA whereas Pfandbriefgesetz just says that Pfandbrief loans and their interest expense must be covered by cover assets and interest revenue from the cover at all times<sup>7</sup>

Concentration limits: At Pfandbriefzentrale schweizerischer Kantonalbanken loan subscriptions for member banks are limited to 35% of their reported domestic mortgage loans by decision of the Board of Directors. Pfandbriefbank applies the same limits and already at the level of 30% starts to restrict new lending in order to avoid hitting the ceiling.

Cover registration and monitoring, property valuation: The law requires cover asset registration at both member and central issuer level<sup>8</sup>. The cover pool at central issuer level is built by all outstanding Pfandbrief loans. The cover pool at member bank level is created by registering a cover object in the cover register of the bank. Documents have to be earmarked and physical documents have to be kept separately.

There is no centralized cover registration in the Pfandbriefzentrale of Kantonalbanken. Members have to report annually a full cover inventory and a journal reflecting changes in the cover. In the case of the Pfandbriefbank, the cover register of the member bank is electronically linked to the central "mirror register" of the Pfandbriefbank. This permits a daily updating of the cover inventory and journal. Pfandbriefbank to this end has developed a joint electronic registration IT system to which all member IT is linked via interfaces (for additional detail see below).

Detail of the application journey are given by Horat (2008):

- The member enters loan, surety and property characteristics into its own IT system, subject to detailed data masks provided by Pfandbriefbank.
- The member flags a loan for coverage request in the joint IT system, with the system indicating preliminary global eligibility and volume of funding.
- The Pfandbriefbank records and values the coverage requests and determines the cover value, i.e. the eligible amount of funding. The Pfandbriefbank also checks the property valuation for plausibility, with the help of a centralized hedonic pricing model. It determines a 'standard value' for the property.
- Under a 4 eyes principle of officers of Pfandbriefbank the request for funding is granted permission, as requested or with a lower cover value, or rejected. The request can also be put on hold, e.g. if data is missing, in which case the cover asset amount is set to zero.
- The member bank finally receives funding authorization from the Pfandbriefbank.

Pfandbriefbank under this structure technically acts as cover pool monitor for the member banks without a specific legal designation. Moreover, it adds an important property valuation function:

- Detailed hedonic characteristics data lists are to be submitted by the banks with the cover asset registration.
- A hedonic property valuation regression model is specified that permits the valuation of new and existing properties in the cover.

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<sup>7</sup> Article 19 Pfandbriefgesetz. Article 26 stipulates that non-members receiving loans need to cover at 105%.

<sup>8</sup> Article 21 and Article 16 Pfandbriefgesetz.

- The model is updated quarterly. With every update, the through hedonic imputation the existing properties in the cover are re-valued and eligible cover funding volumes are adjusted upwards or downwards.

One reason for the absence of commercial real estate, apart from rental housing, in the cover pool of Pfandbriefzentrale is the difficulties in similarly standardizing and updating the valuation techniques for this asset class. There is finally a special cover committee (Deckungsausschuss) at Pfandbriefbank that reviews 'substantial' cover pool entry proposals.

Banking supervision in Switzerland is essentially not carried out by FINMA directly but by external auditors approved by FINMA. Pfandbriefbank specifies a special audit program for the on-site cover register audits as an element of the audit program specified by FINMA.

Legal nature of the Pfandbrief loan asset: Pfandbrief loans of the centralized issuers receive their mortgage-backed legal nature through a security interest over the registered collateral granted by the law (Registerpfandrecht). This statutory right means that loans themselves are not registered. However, according to the regulation (Pfandbriefverordnung), the standard bank accounting of the Pfandbrief loans is an integral part (Bestandteil) of the cover register.

Due to the legal obligation to comply with the overcollateralization criteria at all times the cover pools at the member level are dynamic, permitting the substitution of mortgage loans violating the eligibility criteria. In the case of Pfandbriefbank the associated substitution risk is mitigated by the fact that collateral is registered and monitored by the centralized issuer himself.

## Debt Issuance

Funding instrument: the Swiss Pfandbrief is a bond in the form of book-entry. It has a fixed coupon and a predefined maturity (hard bullet). The covered bonds are listed on the Swiss Stock Exchange (SIX) and can be traded at any time.

The Swiss Pfandbrief issuers are larger bond issuers than the Swiss government. In the domestic bond segment of the SIX the Pfandbrief makes up for 34% of outstanding.<sup>9</sup> One of the great strengths of pooling: large volumes of highly standardised securities and correspondingly liquid markets. Today, Swiss Pfandbriefe have greater secondary market liquidity than their Swiss government counterparts.

Minimum maturity is 3 years, maximum maturities historically have been up to 30 years. Currently, maturities of issuances are between 5 and 15 years. The weighted residual maturity in 2017 at Pfandbriefbank was 6.7 years. Minimum denomination of the bonds is 5000 CHF. Since they were founded in 1930 and 1931, the Pfandbriefzentrale/bank have always met their obligations on time and in full.

Issuance process: covered bonds issued by Pfandbriefzentrale/bank are issued in individual series 'on tap'. Table 1 in the upper half gives a 2017 snapshot from Pfandbriefbank: series 561, for example, has been re-issued three times during the year 2012 – at the same coupon, but different market prices given the current rate environment. Bond maturities at every new issue date decline, which will symmetrically shorten new Pfandbrief loan maturities. Pfandbriefbank according to its latest calendar for 2019 issues once a month. Through the tap issuance technique, the issuers are able to realize several maturity points spread over the yield curve at a particular issuance time without compromising liquidity.

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<sup>9</sup> Horat and Mueller (2018)

Nevertheless, the reopening of existing and issuance of new bonds on depends on the market situation, on loan demand by members and on risk considerations of the centralized issuer. The number of yield curve points will typically be limited to 1-4, since member bank demand for use of the centralized issuer are concentrated on their gaps in their funding structure, typically in the Swiss case funds between 7- and 12-year maturity. However, concentrating on too few bond issuances and thus driving up individual bond volumes too high may increase roll-over risk for the Pfandbriefbank and its members. On average, the 127 outstanding Pfandbriefbank bond series have 540 million CHF outstanding.

The lower half of Table 1 from Pfandbriefzentrale sorts their bond (re)issuance by issuance date. Horat (2007) describes the issuance process for Pfandbriefzentrale for the early 2000s in detail:

- The company initially runs a demand survey among member bank treasuries. The Pfandbriefzentrale indicates coupons and maturities to banks, which in turn commit to subscribe to certain funding volumes. After ca 2 weeks, the survey is closed.
- Within the following week, the issuance syndicate (see below) becomes active and invitations to bid are sent to institutional investors, including member treasuries as potential investors<sup>10</sup>. The syndicate determines an issuance price proposal, which is confirmed by the management of the Pfandbriefzentrale and communicated to member banks. Subsequently, registrations of the bond issues and prospectuses are formulated.
- On issuance date, a definitive amount of the bond is fixed together with final loan amounts to members. Public subscription of the bonds will be open for another week and disbursements of loans will take place within another week.

**Table 1 Tap Issuance of Swiss Pfandbriefe**

TSIN	Serie <sup>1</sup> Nr.	Zins- satz %	Ausgabe- kurs %	Liberiert	Fällig	Nominal 31.12.2016 CHF Mio
CH 014 714 434 6	561	0.625	100.619	23.01.2012	23.01.2017	218
CH 014 714 434 6	561 <sup>2</sup>	0.625	100.463	30.03.2012	23.01.2017	253
CH 014 714 434 6	561 <sup>3</sup>	0.625	100.908	27.04.2012	23.01.2017	119
CH 014 714 434 6	561 <sup>4</sup>	0.625	101.899	02.08.2012	23.01.2017	350
CH 020 400 272 6	578	0.250	100.320	15.01.2013	17.03.2017	306
CH 020 400 272 6	578 <sup>2</sup>	0.250	100.236	29.04.2013	17.03.2017	290
CH 004 388 957 2	440 <sup>6</sup>	3.650	100.000	15.07.2008	13.04.2017	50
CH 013 517 631 8	555	1.125	100.341	24.08.2011	24.05.2017	175
CH 013 517 631 8	555 <sup>2</sup>	1.125	102.519	30.11.2011	24.05.2017	180
CH 013 517 631 8	555 <sup>3</sup>	1.125	103.631	31.05.2012	24.05.2017	448
CH 002 591 505 6	403	3.000	100.825	27.06.2006	27.06.2017	519
CH 002 591 505 6	403 <sup>2</sup>	3.000	95.915	09.08.2007	27.06.2017	110
CH 002 591 505 6	403 <sup>3</sup>	3.000	95.632	15.07.2008	27.06.2017	271
CH 003 703 995 2	433 <sup>6</sup>	3.120	100.000	05.02.2008	05.09.2017	50
CH 011 817 380 3	527	1.375	100.668	18.10.2010	18.10.2017	210
CH 011 817 380 3	527 <sup>2</sup>	1.375	97.638	30.03.2011	18.10.2017	240
CH 011 817 380 3	527 <sup>3</sup>	1.375	103.071	18.10.2011	18.10.2017	145
CH 002 319 437 3	396	2.250	100.590	15.11.2005	15.11.2017	239
CH 002 319 437 3	396 <sup>2</sup>	2.250	99.745	01.09.2009	15.11.2017	541
CH 002 319 437 3	396 <sup>3</sup>	2.250	103.757	20.05.2010	15.11.2017	185

Liberierung	Serie	Zinssatz %	Ausgabekurs %	Laufzeit Jahre	CHF Mio.	Rückzahlung Serie	CHF Mio.
21.02.2017	486	0,125	100,524	7,781		247	605
	489	0,375	100,902	10,583		407	
	490	0,500	100,110	14,997		285	
28.02.2017	482	0,000	100,000	7,289		538	485
	489	0,375	101,300	10,558		177	100
						376	100
12.04.2017	491	0,010	100,000	6,814		312	673
	492	0,375	100,969	9,653		250	
	493	0,500	100,682	12,500		150	
03.05.2017	458	0,500	100,434	6,464		230	
	488	0,250	102,282	8,050		286	
	489	0,375	102,536	10,383		215	
	462	0,625	104,715	12,203		98	
	490	0,500	102,562	14,797		190	

Source: Pfandbriefbank (upper half) and Pfandbriefzentrale (lower half), annual reports 2017. Notes: Zinssatz – interest rate, Ausgabekurs – issuance price, liberiert – issuance date, faellig – maturity.

The issuance process at the time lasted slightly over one month. Today, due to the high standardization and tested routines associated with the centralized issuer model issuance is possible within 48 hours from the survey of the banks to the issue and allocation of the loans. A few more days will need to be added until settlement.<sup>11</sup>

Members in a survey undertaken by Horat (2007) have criticized that maturities are typically not exactly known in advance, issuance dates are fixed and not directly aligned with member requests. Nevertheless, the issuance mechanism remains popular among banks, funding ca 12% of Swiss mortgages despite regulatory headwinds discouraging maturity matching<sup>12</sup>, and has even assisted

<sup>10</sup> The SNB has been adamant to push the Pfandbrief as a collateral for liquidity generation of banks with the central bank during the crisis of 2008 and to this end reduce the costs of holding Pfandbriefe by member banks. See Jordan (2008).

<sup>11</sup> According to Pfandbriefbank, the greatest constraint further cutting back timing is the stock exchange.

<sup>12</sup> Horat (2007) shows that the centralized issuer fund most of the refinancing gap for regional banks and savings banks and Raiffeisenbanken, about half for Kantonbanken and only a fraction below 5% for the large commercial banks. The large banks use typically their own securitization and structured covered bond exits. Yet, both large banks have intensively used Pfandbriefbank as funding source during and since the crisis situation in 2008. In fact, the Pfandbrief

the global Swiss banks UBS and Credit Suisse whose reputation was tarnished by the U.S. Subprime crisis to issue when the single issuer bond market was closed for them.

**Table 2 Commissions/Fees, Issuance Costs and Administration Costs of Pfandbriefzentrale**

	2017	2016	2015	2014	Average
<b>Per Number of Bonds Issued/Tapped, CHF</b>					
Commissions and Fees	99,767	121,586	165,750	209,000	149,026
Administration	93,667	100,552	114,292	122,636	107,787
Issuance Costs (Depreciation)	29,667	36,690	52,417	74,682	48,364
<b>Per Gross Issuance Volume, Basis Points</b>					
Commissions and Fees	0.039	0.043	0.052	0.056	0.047
Administration	0.036	0.035	0.036	0.033	0.035
Issuance Costs (Depreciation)	0.012	0.013	0.016	0.020	0.015

Source: Pfandbriefzentrale, annual reports 2014-2017, consultant computations.

Issuance cost: There are two layers of issuance costs: indirect costs through fees and commissions and direct issuance costs.

Fees and commissions entail an annual commission for securities settlements through the banks or brokers and quotation costs for the SIX domestic bond segment.

Direct issuance costs are primarily related to the costs of the issuance syndicate. Switzerland permits such syndicates of banks that de-facto monopolize the sales of public securities and charge fixed term fees. Syndicate members are all Kantonbanken for the Pfandbriefzentrale and Credit Suisse, UBS and Raiffeisen together with a group of private banks for the Pfandbriefbank.<sup>13</sup>

At Pfandbriefzentrale, while fees and commissions are costs under the profit and loss account, direct issuance costs are activated under assets in the balance sheet and then depreciated. Pfandbriefbank in contrast books all direct issuance costs through the profit and loss account without prior activation. In both cases, prepaying members or members holding the Pfandbrief in own portfolio are required to reimburse the centralized issuer for historic/depreciated direct issuance costs.

Activation of issuance permits to gauge the direct per issuance costs. Pfandbriefzentrale in 2017 activated costs of CHF 1.2 million for 30 transactions, including taps, or CHF 40,000 per transaction. Calculated over the CHF 7.73 billion gross issuance volume of the year the costs were 1.6 bp. The profit and loss statement in Table 2 reflects the depreciated issuance costs.<sup>14</sup>It also reveals that Pfandbriefzentrale incurs high commission expenses, probably resulting from a certain overpricing of payment services by its members.

## Shareholding and Capital Requirements

Shareholding: Membership involves registered shareholding. By law, the minimum number of shareholders must be 5. Shares are distributed broadly in proportion to the funding provided to the members. Even with fluctuating proportions of funding the shareholder structures have remained very stable over time.

In the case of Pfandbriefbank, the statutes require such shareholding to be proportional to the borrowing from the centralized issuer. Article 6 of the Statute states:

system was used as a crisis instrument to provide the suffering big banks with liquidity. Link:

[https://pfandbriefbank.ch/sites/en/assets/File/Presse/20140917%20Der%20stille%20Retter%20der%20Grossbanken%20\(Finanz%20und%20Wirtschaft\).pdf](https://pfandbriefbank.ch/sites/en/assets/File/Presse/20140917%20Der%20stille%20Retter%20der%20Grossbanken%20(Finanz%20und%20Wirtschaft).pdf)

<sup>13</sup> Pfandbriefbank management remarks that thanks to high standardisation and frequent issues, Pfandbrief institutions would be the only issuers besides the Swiss Confederation where an auction model could also work.

<sup>14</sup> Switzerland also raises an issuance tax 12 bp per year maturity. For example a 10 year bond will be taxed at 1.2%.

“1. Upon accession, the Pfandbrief Bank shall provide the new member with the minimum participation pursuant to Art. 4 par. 3. In the year following new membership the Pfandbriefbank will upon the renewal of the Board of Directors provide as many shares to the new member as correspond to the new member's percentage share in the total loan position. The Pfandbrief bank transfers the shares at their real value to the new member.

**Table 3 Capital and Loan Outstandings of Kantonalbanken at Pfandbriefzentrale**

Aktionäre	Aktienkapital				Pfandbriefdarlehen	
	Nominal CHF 1 000	Anteil %	Einbezahlt CHF 1 000	Nicht einbezahlt* CHF 1 000	Betrag CHF 1 000	Anteil %
Zürcher Kantonalbank	289 530	17,82	57 906	231 624	9 275 000	17,82
Banque Cantonale Vaudoise	221 595	13,64	44 319	177 276	5 561 000	10,68
Berner Kantonalbank	174 320	10,73	34 864	139 456	3 397 000	6,52
Banque Cantonale de Genève	96 025	5,91	19 205	76 820	2 774 000	5,33
St. Galler Kantonalbank	94 545	5,82	18 909	75 636	3 909 000	7,51
Thurgauer Kantonalbank	94 545	5,82	18 909	75 636	3 077 000	5,91
Basellandschaftliche Kantonalbank	84 205	5,18	16 841	67 364	1 867 000	3,59
Basler Kantonalbank	84 205	5,18	16 841	67 364	2 052 000	3,94
Luzerner Kantonalbank	69 430	4,27	13 886	55 544	3 106 000	5,97
Graubündner Kantonalbank	62 045	3,82	12 409	49 636	1 723 000	3,31
Aargauische Kantonalbank	60 570	3,73	12 114	48 456	975 000	1,87
Banque Cantonale du Valais	47 275	2,91	9 455	37 820	1 300 000	2,50
Banque Cantonale de Fribourg	44 320	2,73	8 864	35 456	3 265 000	6,27
Schaffhauser Kantonalbank	35 455	2,18	7 091	28 364	518 000	0,99
Schwyz Kantonalbank	29 545	1,82	5 909	23 636	1 010 000	1,94
Banque Cantonale Neuchâteloise	28 070	1,73	5 614	22 456	1 947 000	3,74
Zuger Kantonalbank	22 155	1,36	4 431	17 724	1 021 000	1,96
Banca dello Stato del Cantone Ticino	17 725	1,09	3 545	14 180	2 042 000	3,92
Glarner Kantonalbank	14 775	0,91	2 955	11 820	464 000	0,89
Obwaldner Kantonalbank	14 775	0,91	2 955	11 820	439 000	0,84
Nidwaldner Kantonalbank	13 295	0,82	2 659	10 636	792 000	1,52
Appenzeller Kantonalbank	10 345	0,64	2 069	8 276	328 000	0,63
Urner Kantonalbank	8 860	0,55	1 772	7 088	551 000	1,06
Banque Cantonale du Jura	7 390	0,45	1 478	5 912	673 000	1,29
<b>Total</b>	<b>1 625 000</b>	<b>100,00</b>	<b>325 000</b>	<b>1 300 000</b>	<b>52 066 000</b>	<b>100,00</b>

Source: Pfandbriefzentrale, annual report 2017. Notes: Aktienkapital – share capital, Anteil – share, Einbezahlt – paid in, Pfandbriefdarlehen – Pfandbrief loans.

2. If a bank refuses to acquire the number of shares specified by the Board of Directors, no more Pfandbrief loans shall be granted to it as long as the bank's proportion of shares in total shareholding is smaller than the proportion of its Pfandbrief loans.”

Minimal share ownership according to Article 4, paragraph 3 of the Statute of the Pfandbriefbank is 10 shares of nominal value of CHF 1,000. Since 2008, Pfandbriefbank has required a subscription of CHF 440 per CHF 1,000 nominal value.<sup>15</sup> Only a part of the capital subscription is to be held in cash (see Table 4).

According to the statutes of Pfandbriefbank, any sale of shares by a member requires the approval of the Board of Directors. The board can in

particular reject a sale if it would result in concentration of shareholding of over 25% in one hand, jeopardizing the independence of the bank. Upon liquidation of a member bank, the Pfandbriefbank is entitled to assume the shares at their ‘real value’.

In the case of Pfandbriefzentrale, the Statute is silent on the proportionality principle. The annual report<sup>16</sup> reveals shareholding broadly proportional to loan take-up. The Statute determines a nominal share value of CHF 5,000.

Capital requirements: The statutory minimum capital is 2% of bonds issued.<sup>17</sup> Detail of the definition of capital is contained in the regulation (Pfandbriefverordnung). The capital held according to 2017 reporting is:

- Pfandbriefzentrale/Kantonalbanken: 3.4% of which 2.5% is callable, non-paid-in capital<sup>18</sup>, resulting in a paid-in capital ratio of 0.9%.
- Pfandbriefbank/Hypothekarkreditinstitute: 2.3% of which 0.7% is callable, resulting in a paid-in capital ratio of 1.6%.

75% of the not paid-in capital must be secured by letter of commitment. All banks have signed commitment certificates for the unpaid capital. These obligate the bank to comply with the obligation to make additional capital contributions on first demand and without objection. This contingent obligation is taken into account in the liquidity coverage (LCR) calculation and must be backed with liquidity from the banks.

<sup>15</sup> <https://pfandbriefbank.ch/de/pfandbriefbank/aktionariat-und-aktienkapital/>

<sup>16</sup> [https://www.pfandbriefzentrale.ch/downloads/geschaeftsbericht/Geschaeftsbericht\\_2017\\_d.pdf](https://www.pfandbriefzentrale.ch/downloads/geschaeftsbericht/Geschaeftsbericht_2017_d.pdf)

<sup>17</sup> Article 10 Pfandbriefgesetz.

<sup>18</sup> Member banks are required to pay in the remaining capital within 1 week in an emergency.

Because of the matching of Pfandbrief loans and Pfandbriefe and the low-cost structure of the institution, capital paid in is mostly invested in liquid assets.

**Table 4 Total and Paid-in Capital of Swiss Centralized Pfandbrief Issuers**

2017	Hypo			Kantonalbanken		
	CHF mln	%	%	CHF mln	%	%
	Assets		Bonds	Assets		Bonds
<b>Capital</b>						
total*	1615	2.3%	2.4%	1772	3.4%	3.4%
not paid in	504	0.7%	0.7%	1300	2.5%	2.5%
paid in	1111	1.6%	1.7%	472	0.9%	0.9%
<b>Assets</b>	69291			52781		
<b>Covered Bonds</b>	67250			52066		

\*including reserves

Source: Annual reports, Consultant.

**Reserves:** according to the Statute of Pfandbriefzentrale, 5% of the annual profit shall be allocated to the general reserve until it reaches 20% of the amount paid in. An “appropriate” dividend is disbursed on the paid-in share capital. Any remaining amount can be used by the

General Meeting to contribute to the free reserve, for provisions for special purposes and for an appropriate carryforward to new accounting periods.

The Statute of Pfandbriefbank has a similar provision, but has explicitly capped the dividend per share to 5%.

## Risk Exposure and Management

**General risk management approach:** Pfandbriefzentrale/bank are primarily aggregators and issuance vehicles and by design take only very limited risks. Economically the centralized issuers mitigate, but as a result of the term funding provided do not eliminate, interest rate liquidity risk. The centralized hedonic valuation provided by Pfandbriefbank also assists banks in mitigating credit risk.

**Mortgage and counterparty credit risk:** Credit risks of the centralized issuers are relatively well diversified and mitigated, given the conservative collateral valuations, including at Pfandbriefbank state of the art valuation and revaluation techniques, overcollateralization levels, large number of credit counterparties and regional diversification of both portfolio and counterparties. Member banks in addition are regulated banks and need to continue to hold Basel capital levels for the mortgage loans.

Pfandbrief loans are explicitly protected against all bail-in measures.<sup>19</sup> In the event of bankruptcy, the standard case in the Swiss bankruptcy code is that liquidation proceeds are not distributed until all assets have been fully realized. When liquidating banks, the Swiss resolution authority FINMA has considerable room for manoeuvre and, under certain circumstances, somewhat different rules apply than in the case of normal company bankruptcies. FINMA has explicitly established the legal basis for early selective collection of the cover pool through segregation in favor of the eligible Pfandbrief institution.<sup>20</sup>

Questions could be raised regarding the statutory and not contractual nature of mortgage coverage of the Pfandbrief loans.<sup>21</sup> However, since the banking supervisor in Switzerland is at the same time

<sup>19</sup> Art. 49+50 BIV FINMA.

<sup>20</sup> Horat and Mueller (2018)

<sup>21</sup> According to a series of interviews undertaken by the Consultant for the EU Commission on bail-in of subordinated bank debt in 2015 in France, Italy and Germany, market participants, rating agencies and regulators consider specific contractual provisions in bank debt instruments as legally safer than often generally formulated statutory provisions without such specific contractual provisions.

the bank resolution agent and supervises the covered bond system, the centralized issuers expect priority execution during insolvency.

Regarding counterparty risk the Pfandbriefzentrale/bank is independent and under no obligation to allocate funds to members. The centralized issuer may refuse or reduce the granting of further new loans to individual banks or bank groups at any time in justified cases - examples are serious deficiencies in the bank organization or risk considerations -, and until the conditions imposed by him have been fulfilled. This is important in order to minimize the failure risk of the centralized issuer and thus avoid systemic effects on all other member banks.

Interest rate risk: the strict matching rules of the law (Pfandbriefgesetz) aim at protecting the Pfandbriefzentrale/bank from exposure to interest rate risks.

The principle of balance (Gleichgewichtsprinzip) enshrined in the law demands that currency (only CHF), nominal amounts and maturities must be identical between Pfandbrief loans and Pfandbriefe. It is also ensured that interest receipts are made simultaneously or earlier and at least in the same amount as the outgoing interest payments. One minor exception from the principle of balance is that a slightly higher interest is paid semi-annually by members to the Pfandbriefzentrale/bank and bond interest is paid annually by the Pfandbriefzentrale/bank to bond investors. This measure in favor of the centralized issuer reduces the sum of interest payment due and as a result potential challenges in case of a delay.

As a direct implication, early repayment is possible only via the delivery option of the bond.<sup>22</sup> This would mean in practice that the member repurchases bonds from the open market in an identical nominal amount to the desired prepayment and hand them over ('deliver') to the centralized issuer. However, as a result of the requirement to repay issuance costs upon such delivery and of the low spreads between Pfandbriefe and Pfandbrief loans, delivery is rarely practiced. Instead member banks steer the balance sheet by buying Pfandbriefe corresponding to currently unneeded loans on the funding side. By doing so, Pfandbrief on the asset side and loan on the funding side neutralize each other. If needed, the Pfandbrief can be sold again on the market to cover fresh funding and/or liquidity needs.

Unlike at the central issuer level, where the law leads to an almost perfectly matched balance sheet, this is not mandatory at the bank level. Swiss Pfandbrief loans are backed by dynamic pools, i.e. without direct matching of cash flows between mortgage assets and loans. A dynamic cover pool changes continuously due to changes of the composition of the cover pool and/or changes in certain cover pool assets, e.g. cash due to amortizing or prepayment of a mortgage. If a bank goes bankrupt, the centralized issuer has to assume the risk resulting from a potential cash flow mismatch between cover pool and Pfandbrief loans.

Swiss regulations do currently not demand present value matching of cover assets and Pfandbrief loans. Since 1930 there is a requirement of simultaneous nominal and interest revenue matching.

Liquidity risk: in the going concern case of all members, the Swiss centralized issuers incur rather theoretical liquidity risk. Such risk may arise e.g. if, for technical reasons, the syndicate does not make the payment on the settlement day, but the loans have already been disbursed to the members. In this case, Pfandbriefbank/zentrale is contractually not obliged to pay out the loans to members, but can bridge the payment with its own liquid assets in which its equity is invested, and can access a 'bottleneck' facility (Engpassfazilität) with the SNB, Repo market or an open credit line.

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<sup>22</sup> Article 12 Pfandbriefgesetz.

The Pfandbriefbanks liquid assets generated by investing its equity in repo eligible securities or liquidity are calibrated such as to compensate for the insolvency of any member or group of affiliated members. Since not all equity is paid in in such a case the first action will be an equity cash call on the members. In addition, if that would not be sufficient, it is expected that the entitlement to the cash flows from the cover pool segregated from the insolvent member can be used as collateral with the SNB as well.

**Risk of non-coverage of issuance cost:** Early repayment to a Swiss centralized issuer requires pro-rata reimbursement of depreciated issuance costs, so that the issuer is also matched from a cost perspective. Issuance costs at Pfandbriefzentrale are separately activated and written down.

## Pricing and Administration Cost Structure

**Table 5 Pricing and Cost Indicators of Pfandbriefbank, 2017**

	2017
<b>Adjustments</b>	
Average Total Assets (ATA)	68,229,225
Average Total Liabilities (ATL)	66,624,060
Average Capital (AC)	1,605,165
Interest receipts	907,295
IR/ATA	1.3298%
Interest expenses	-861,387
IE/ATL	1.2929%
IE/ATA	1.2625%
Net interest income	45,908
Naked Spread (IR/ATA - IE/ATL)	0.0369%
NII/ATA	0.0673%
Other income	-361
	-0.0005%
Admin expenses	-3,315
Admin/ATA	0.0049%
Operating margin (NII - admin)	42,232
Operating Margin/ATA	0.0624%
RoE (Operating Margin/AC)	2.6310%

Source: Pfandbriefbank, annual reports 2016 and 2017, Consultant computations.

**Pricing of Pfandbrief loans:** the Pfandbriefzentrale/bank passes on the funding of newly issued bonds with a small spread covering issuance and administration costs. Table 5 shows pricing and cost indicators for the Pfandbriefbank for 2017. Loan pricing in 2017 was indicated by the annual report at 5bp while total net interest income including the securities portfolio according to the financial reporting was 6.7bp. Pfandbriefbank indicates that the 5bp margin serves to cover administration costs, strengthen the capital base of the institution and otherwise pay dividends.

Direct issuance costs are paid at both centralized issuers separately and directly (see above) by members. Indirect issuance costs, such as the costs of ratings, are covered in administration costs.

**Administration cost, size of the institutions:** the administration costs of the Pfandbriefzentrale/bank are very low. Table 5 calibrates the costs for the

Pfandbriefbank at CHF 3.3 million, given the huge balance sheet at only 0.5 bp. In other words, 90% of the 5 bp margin flows back to members in the form of capital increases and dividends.

Perhaps more indicative for the low-cost model is the small size of the institutions in terms of employment:

- Pfandbriefzentrale of the Kantonalbanken is co-managed by the largest member bank under management contract with a small number of staff seconded. The company itself does not have any own staff.
- Pfandbriefbank is a small entity with only 9 staff (2018).<sup>23</sup>

In order to keep supervision cost low, the Boards of Directors for both companies are limited in size by the respective statutes.

**Cost impact of the IT system:** Pfandbriefbank operates a centralized cover asset management IT system with interfaces to member core and transactions IT. Cover asset management requires ca

<sup>23</sup> <https://www.pfandbriefbank.ch/de/pfandbriefbank/mitarbeiter/>. Pfandbriefbank further details that staffing is only 7.8 full-time equivalents.

100 data points regarding borrowers, loans (including all future cash flows), properties and transactions/registration items. Great detail is required regarding property characteristics in order to optimize the recurring hedonic property valuation. No default or prepayment event data on the historic cover are being collected by Pfandbriefbank.<sup>24</sup>

The centralized system has been programmed by a mid-sized IT firm that also sells collateral transaction IT solutions for members. Pricing of the IT firm for members is influenced by Pfandbriefbank. For the last years according to Pfandbriefbank the annual IT maintenance costs of the members can be calibrated at ca 10,000-20,000 CHF, in the case of the large banks 50,000 CHF. Pfandbriefbank spends 300-350,000 CHF per year.

Regarding the alternative of decentralized IT systems, according to a data point provided by a member and quoted in Horat (2008) for a single Kantonalbank member of Pfandbriefzentrale the decentralized cover asset management system cost that member 10 basis points per annum.

The automated Pfandbriefbank system saves these costs. While members initially incur IT investment costs, recurring costs are reduced. Also, as the system automatically evaluates cover proposals administration costs for verification are very limited on both sides. The member bank should have 2 employees because of substitution, depending on volume this is usually a secondary activity of the loan officers. Pfandbriefbank has 3 employees in the cover register team for backup reasons. These handle around 150 - 300 cover asset applications and collateral revaluations per day and monitor the portfolio of 186,000 properties.

## Annex

### Literature:

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[https://www.snb.ch/de/mmr/speeches/id/ref\\_20080515\\_tjn/source/ref\\_20080515\\_tjn.de.pdf](https://www.snb.ch/de/mmr/speeches/id/ref_20080515_tjn/source/ref_20080515_tjn.de.pdf)

### Company websites:

<https://www.pfandbriefzentrale.ch/en/>

<http://www.pfandbriefbank.ch/index.cfm>

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<sup>24</sup> The reason given by the CEO is to have a ‘clean separation of the spheres’ between centralized issuer and member.