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## C O N S U L T A T I O N   M E M O R A N D U M

### **Pillar 2 capital requirements for maturity assumptions**

#### **Summary**

In the view of Finansinspektionen (FI), the Pillar 1 rules for the maturity assumptions under the IRB approach underestimate the actual credit risk. The capital requirements under Pillar 1 are based on the contractual maturity of exposures. The Pillar 1 rules do not take into account the reasonable expectations from both banks and borrowers that loans will be extended and the risks that arise from a financial stability perspective if the need for stable, long-term lending cannot be met.

FI considers the assumptions underlying the regulatory framework regarding maturity and the impact maturity has on the credit risk, and thus the capital requirements, to be so important that a method is needed to ensure that the capital requirements cover the full credit risk including stability risks. In this memorandum FI presents its position on this matter, which can be summarised as follows:

- FI intends to introduce a floor for maturity assumptions of 2.5 years in the internal models for credit risk. This floor will generate an additional capital requirement under Pillar 2 and will be calculated as the product of the increase in the banks' risk-weighted exposure amounts that would have been the result of a changed maturity assumption under Pillar 1 and the capital requirement as a percent for the exposure types in question.
- FI intends to apply the maturity floor to the supervisory capital assessment for banks that have received authorisation to use the advanced IRB approach. The intention is to use the floor for exposures to corporates.

FI may exempt some exposures that have genuinely short maturities and where there is no reasonable expectation of an extension, and will take into consideration responses to this memorandum on this topic.

FI intends to use the maturity floor in its supervisory capital assessment starting in 2016. The supervisory capital assessment is usually concluded around the third quarter every year. FI estimates that the maturity floor will increase the CET 1 capital requirements of affected banks by between 0.2 and 0.6 percentage points.

Any viewpoints regarding the positions presented in this memorandum and any proposed exemptions shall be submitted to FI no later than 15 April 2016.

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## 1 Introduction

### 1.1 Background and purpose

When calculating their capital requirements, banks shall take into account all material risks that may arise for themselves and for the financial system. The maturities of the banks' exposures have impact on the risk for the banks and the financial system.

The capital requirements that are determined in accordance with the capital requirements calculations set forth in the Capital Requirements Regulation,<sup>1</sup> which are called Pillar 1, take into consideration the contractual maturity<sup>2</sup>. The regulations do not allow for either reasonable expectations that loans will be extended, in which case the actual maturity often exceeds the contractual maturity, or society's overall need for long-term credit supply.

Pillar 2 supplements the capital requirements calculations that are set out in the Capital Requirements Regulation. Pillar 2 is the umbrella term for the rules governing banks' internal capital adequacy assessment processes and FI's supervisory review and evaluation process, of which FI's supervisory capital assessment constitutes an important part. For a more detailed description of Pillar 2, see FI's memorandum, *Kapitalkrav för svenska banker* (FI Ref. 14-6258) and section 2 of this memorandum.

The aim of this consultation memorandum is to describe FI's position and approach to assessing capital requirements under Pillar 2 with regard to maturity of credit exposures. The memorandum also describes how the maturity is accounted for in the IRB approach<sup>3</sup> and the various risks and problems that may arise due to the maturity assumptions.

In this memorandum, the terms "banks" or "lenders" are used for all institutions (banks, credit institutions and securities companies) that are covered by the capital adequacy rules.

### 1.2 Different perspectives on maturity

The maturity of an exposure can be defined in a number of different ways. One perspective is to only look at the contractual conditions. The IRB approach as it is used by banks that have received authorisation to use their own LGDs and conversion factors for exposures to corporates, institutions or national governments and central banks (the IRB approach as used by these banks is called the "advanced approach" in this memorandum) is largely based on contractual maturity assumptions for all exposure types except exposures to

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<sup>1</sup> Regulation (EC) No. 575/2013 of the European Parliament and of the Council of 26 June 2013 on prudential requirements for credit institutions and investment firms and amending Regulation (EU) No 648/2012.

<sup>2</sup> There are some exceptions, which are described in section 2.

<sup>3</sup> The internal ratings-based approach is referred to as "the IRB approach".

households, the calculation of which is regulated in detail by the Capital Requirements Regulation.

Other perspectives regarding maturity take into account different types of behavioural and expectational factors, such as actual or expected extensions and any early repayment. The perspective that is applied to maturity – whether it is contract-based or expectation-based – depend on which primary risks are considered. A contract-based perspective of maturity can be justified based on an *idiosyncratic* view of risk, which focuses on the individual bank and does not take into consideration broader risks in the economy or the financial system. However, even in an idiosyncratic perspective the actual maturity often exceeds the contracted maturity.

If a broader view of risk is used that also takes into account the impact on the financial system, financial stability and the economy's need for credit – which can be called a *systemic* view of risk – it can be more appropriate to emphasise an expectation-based perspective of maturity with a longer time horizon.

### 1.2.1 *Maturity under Pillar 1*

The Capital Requirements Regulation states that maturity in the advanced approach is calculated as the weighted average of the residual maturity of the contractual payments, i.e. both interest payments, if any, and repayment of the nominal amount, without discounting.<sup>4</sup> For interest-bearing exposures, the maturity is therefore slightly shorter than the residual time to the final payment according to the contract. In the event the lender cannot calculate maturity in accordance with the main rule in the regulation, maturity is instead determined as the maximum residual time that the borrower has to fulfil its contractual obligations in full. In the capital requirements calculation, maturity may be set at no more than five years and with some exceptions no less than one year. Exceptions from the one-year floor apply to certain specific exposure types, such as derivatives and repurchase transactions. The maturity assumptions under Pillar 1, in other words, do not take into consideration behavioural or expectational factors, such as early repayment or extensions of loans that are not pre-determined in accordance with the contract terms.

The IRB approach as it is used by banks that do not have authorisation to use their own LGDs and conversion factors (the foundation approach) is based on a fixed standardised maturity of 1 years<sup>5</sup>.

### 1.2.2 *Actual maturity*

Actual maturity, taking into consideration behavioural and expectational factors, can be either shorter or longer than the maturity that is calculated under Pillar 1 depending on the aspects that are taken into consideration that affect

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<sup>4</sup> See Article 162 of the Capital Requirements Regulation and section 2 of this memorandum for a more detailed description.

<sup>5</sup> Maturities are set at one year for exposures to repurchase transactions, securities loans and commodity loans in accordance with the foundation approach.

the maturity. Borrowers may repay a loan before the due date with the lender's consent. Loans may also be extended by factors that are both positive and negative for the lender.

The purpose of granting loans to companies is often long-term financing of operations, even when the loan's contractual maturity is short. In FI's experience both lenders and borrowers generally expect loans to be extended. Actual maturity, therefore, can be significantly longer than the maturity factor calculated under Pillar 1. Since credit risk increases as the exposure's maturity increases, this means that the capital requirements under Pillar 1 underestimate the banks' actual risk.

Actual maturity can also exceed contractual maturity when the borrower's financial situation deteriorates. In these situations, banks may have difficulty demanding repayment at the contractual end of the loan without this resulting in significant negative consequences for the borrower and thus a higher risk of default and credit losses for the bank. In such a situation the contractual maturity is of lesser significance. It is particularly important to take this into consideration when calculating the capital requirements since these are meant to cover situations where the economy is under pressure and it cannot be expected that borrowers are able to easily refinance their loan with other lenders.

The arguments set out above indicate that the capital requirements under Pillar 1 underestimate the actual risk. The regulations for the internal models take into consideration contractual maturity and disregard behavioural and expectational aspects that are of particular importance for the supply of credit and financial stability, especially in a situation where the economy is under pressure.

### *1.2.3 Illustration of the consequences of the maturity assumptions on the capital requirement under Pillar 1*

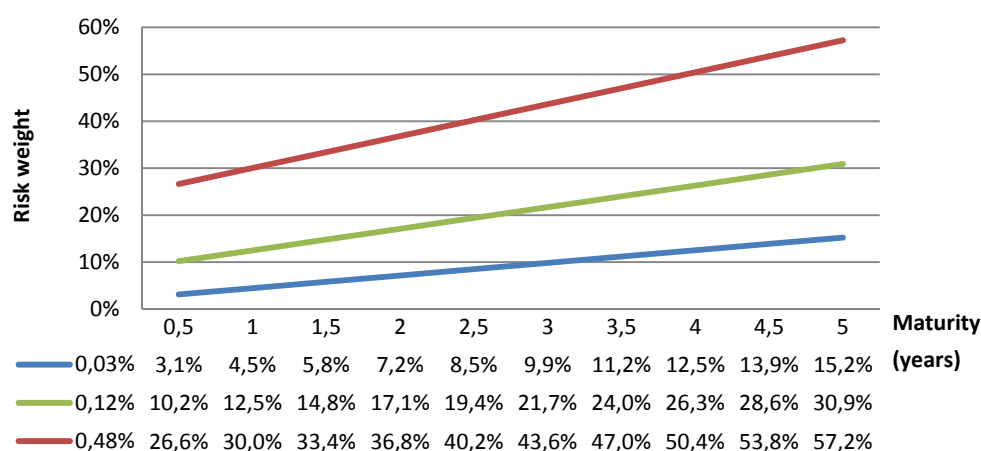
The banks' risk weights are a linear function<sup>6</sup> of maturity (given that the other parameters remain unchanged). The relative sensitivity of the risk weights to the maturity assumptions, i.e. the impact of the risk weights following changes in maturity assumptions relative to the previous levels of the risk weights, is higher for exposures with lower probability of default (PD), which is described below. This means that the maturity assumptions have a relatively larger impact on banks with relatively low risk, such as the major Swedish banks.

Diagram 1 below shows the impact of maturity assumptions on the risk weights given three different levels of assumed PD: the lowest allowable PD value of 0.03 per cent and higher levels of 0.12 and 0.48 per cent. Around 75-85 per cent of the major Swedish banks' exposures to corporates lie within this interval. The diagram is also based on an assumed LGD of 25 per cent.

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<sup>6</sup> In the presence of rather high PD values, the function is no longer linear.

**Diagram 1: Sensitivity of risk weights to maturity assumptions in years given different PD values**



As seen in the diagram, reducing the maturity assumption by six months results in a risk weight reduction of 1.3-3.4 percentage points for exposures with PD of 0.03-0.48 per cent.<sup>7</sup> The absolute sensitivity is higher for exposures with a higher PD level, but in relative terms the relationship is the opposite. For example, an exposure with the lowest possible PD of 0.03 per cent (the blue line in the diagram), a maturity of 3 years and LGD of 25 per cent has a risk weight of 9.9 per cent. Reducing the maturity to 2.5 years decreases the risk weight by 1.4 percentage points to 8.5 per cent. An otherwise equivalent exposure with a PD of 0.48 per cent has a corresponding risk weight of 43.6 per cent and the reduction is 3.4 percentage points. The relative decrease in risk weights, and thus the risk-weighted exposure amounts, are significantly larger for the exposure with low PD (reduction of 14 per cent) than what is the case for the exposure with the higher PD (reduction of 8 per cent).

In other words, the maturity assumptions in the internal models have a significant impact on the banks' risk-weighted exposure amounts. This introduces significant consequences for the capital requirements under Pillar 1 since the Pillar 1 maturity assumptions take into account contractual and not actual maturity. This underestimation of the capital requirements, which is the result of the use of contractual maturity under Pillar 1, is significant for most exposures, but, as described above, relatively larger for banks and exposures with low PD levels.

<sup>7</sup> The sensitivity to the six-month change in the maturity assumption at most is 3.8 percentage points for a PD level of around 1.4 per cent. For PD levels above 1.4 per cent, the risk weights' sensitivity to maturity decreases as the PD increases.

### **1.3 Maturity, credit supply and financial stability**

The economy is affected by changes in the credit supply, i.e. the willingness of and possibilities for lenders to grant and renew loans. The economy can be extra sensitive to contractions in the banks' credit supply during downturns when companies' financial situations can be expected to be under greater stress and their access to alternative financing sources more limited.

The capital requirements under Pillar 1 do not take into consideration society's need for long-term credit supply and the subsequent need for banks to have sufficient capital not just for the contractual maturity of exposures but also, in terms of the need for long-term financing, for extensions across economic cycles.

### **1.4 Maturity and incentives**

The rules for the maturity assumptions under Pillar 1 introduce incentives for banks to shorten the contractual maturity, since this results in lower risk-weighted exposure amounts under Pillar 1. In turn the difference between contractual and actual maturity, and thus the underestimation of banks' capital requirements under Pillar 1 as described in sections 1.2.2 and 1.2.3 above, could grow over time unless the possibilities to reduce the capital requirements with shorter contractual maturities are limited.

## **2 Legal basis**

### **2.1 Supervisory review and evaluation process and the supervisory capital assessment**

Pillar 2 is the umbrella term for the rules that govern banks' internal capital assessments and FI's supervisory review and evaluation process (SREP), of which FI's supervisory capital assessment represents an important part. The supervisory capital assessment is what FI calls its assessment of an individual company's risks and capital requirements and takes into consideration both risks that are covered by Pillar 1 and those that are not. The provisions regarding the supervisory review and evaluation process are set out in Articles 97–101 of the Capital Requirements Directive.

In section 9 of the Special Supervision and Capital Buffers Ordinance (2014:993), the Government has prescribed that FI, in its supervision, shall follow the provisions set out in Articles 97–101 of the Capital Requirements Directive. Article 97 of the Directive states that the competent authorities, on the basis of the supervisory review and evaluation process, shall determine whether the own funds the institution has at its disposal are sufficient for covering the institution's risks, i.e. the supervisory capital assessment. The assessment is based on a comprehensive analysis of the bank and includes all of the requirements set out in the Capital Requirements Directive and the



Capital Requirements Regulation. The Capital Requirements Directive mentions specifically the risks that are covered by Pillar 1 and some risks that are not covered by Pillar 1 in Articles 74–87.

In Article 73 of the Capital Requirements Directive, there is a requirement that the institutions shall have introduced sound, effective and comprehensive strategies and processes to assess and maintain on an ongoing basis the amounts, types and distribution of internal capital that they consider adequate to cover the nature and level of the risks to which they are or might be exposed. The article discusses the bank's *internal* capital assessment, and not FI's supervisory capital assessment, and therefore is not discussed in more detail in this memorandum.

## 2.2 Regulation of maturity in the Capital Requirements Regulation

The rules for how maturity shall be determined in the IRB approach are set out in Article 162 of the Capital Requirements Regulation. Banks that have not received authorisation to use own LGDs and own conversion factors for exposures to corporates, institutions and central governments and central banks shall assign to exposures arising from repurchase transactions or securities or commodities lending or borrowing transactions a maturity of 0.5 years and for all other exposures a maturity of 2.5 years.<sup>8</sup>

Banks that have received authorisation to use own LGDs and own conversion factors for exposures to corporates, institutions and central governments and central banks (the advanced approach) shall specify maturity in accordance with Article 162.2. In accordance with Article 162.2(a), banks shall calculate maturity for exposures subject to a fixed payment flow schedule that corresponds to the weighted average remaining maturity, where the lowest and highest possible values are one year and five years, respectively, with some exceptions, for example for exposures to derivatives and repurchase transactions according to points (b)-(e). For other exposures and instruments where there is no fixed payment flow schedule, maturity, in accordance with Article 162.2(f), shall be the maximum remaining time that the obligor is permitted to take to fully discharge its contractual obligations, assuming that this is at least one year.

The European Banking Authority (EBA) has further clarified that the weighted average maturity in accordance with Article 162.2(a), and, for example, not the maximum remaining time for the obligor in accordance with Article 162.2(f), shall also be used for exposures that can be renewed, insofar as the obligor cannot demand such an extension.<sup>9</sup>

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<sup>8</sup> This applies to the extent that the competent authority has not decided that banks referred to here shall use the method set out in Article 162.2, i.e. the same method used by banks that have authorisation to use own LGDs and own conversion factors for exposures to corporates, institutions and central government and central banks.

<sup>9</sup> See EBA Single Rulebook Q&A, 2013\_687 ([http://www.eba.europa.eu/single-rule-book-qa/-/qna/view/publicId/2013\\_687](http://www.eba.europa.eu/single-rule-book-qa/-/qna/view/publicId/2013_687)).

### 2.3 Pillar 2 and transparency

The provision regarding special own fund requirements in Chapter 2, section 1 of the Special Supervision Act<sup>10</sup> gives FI the right to decide that a bank shall have a higher own funds requirement than the minimum level that would otherwise apply (i.e. higher than what is required in accordance with the Capital Requirements Regulation and the Capital Buffers Act (2014:966)). FI has the right to decide on a special own funds requirement if FI in conjunction with a review and evaluation process believes that one is needed to cover risks that the bank is or may become exposed to and risks to which the bank exposes the financial system. Decisions regarding a special own funds requirement can also be made if the bank does not meet, or it is probable that the institution will no longer meet within the next twelve months, the requirements set out in Chapter 6, sections 1–3, 4a, 4b and 5 of the Banking and Financing Business Act (2004:297) or Chapter 8, sections 3–8 of the Securities Market Act (2007:528). In its capital requirements memorandum, FI discussed the special own funds requirement and FI's supervisory capital assessment.

Chapter 2, section 1 of the Special Supervision Act gives FI the possibility to decide on a special own funds requirement that is bank-specific, which could mean that FI is not able to provide a general determination of its risk assessment. However, some risks that are not covered by Pillar 1 are the same for all banks that have the type of exposures in question. By developing methods and a general assessment practice, FI ensures that all banks are treated equally.

The Government emphasises in Bill 2013/14:228 p. 229 the importance of the transparency of the Pillar 2 process. Section 3 of the Special Supervision and Capital Buffers Ordinance also states that FI, on its website, shall provide the general criteria and methods that are applied to the supervisory review and evaluation process.. It is FI's ambition to remit and publish the assessment methods that are used during the Pillar 2 process. FI has previously published methods for three specific types of risks.<sup>11</sup>

### 2.4 Information collection

Within the framework of its supervision activities, FI has the possibility to request information from individual banks (see, for example, Chapter 13, section 3 of the Banking and Financing Business Act and Chapter 6, section 1 of the Special Supervision Act).

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<sup>10</sup> Special Supervision of Credit Institutions and Securities Companies Act (2014:968)

<sup>11</sup> See the memorandum, FI:s metoder för bedömning av enskilda risktyper inom pelare 2, FI Ref. 14414 ([http://www.fi.se/upload/43\\_Utredningar/40\\_Skrivelser/2015/pelare2-metoddokument-2015-05-08.pdf](http://www.fi.se/upload/43_Utredningar/40_Skrivelser/2015/pelare2-metoddokument-2015-05-08.pdf)).

### 3 Capital requirements under Pillar 2 for maturity assumptions

#### 3.1 Design of the capital requirement

##### 3.1.1 FI's position

FI intends, in its assessment of the banks' capital requirements under Pillar 2, to apply the assumption that the maturity for credit exposures is never lower than 2.5 years. The capital requirement that this assumption will give rise to will be calculated by taking the increase in the risk-weighted exposure amount that would have been determined if the banks used a shortest possible maturity of 2.5 years in the risk weight calculation in accordance with the IRB approach and multiplying it by the bank's capital requirement in per cent for the relevant exposure types.

FI intends to apply the maturity assumption in the assessment of the capital requirements under Pillar 2 for banks with authorisation to use the advanced IRB approach, i.e. banks that have authorisation to use its own estimates of LGD and conversion factors. FI intends to apply the maturity assumption to exposures to corporates.

##### 3.1.2 Underlying reasons for the position

As explained in sections 1.2 and 1.3 above, FI believes that the maturity assumptions under Pillar 1 for banks that use the advanced approach to calculate capital requirements underestimate the risk and thus the capital requirements. The reason for this is that the actual maturity is normally longer than the maturity that is taken into account under Pillar 1. Longer actual maturities result in higher risk and thus greater capital requirements.

As described in section 1.2.3, the underestimation of the capital requirements under Pillar 1 are proportionately larger for banks with low risk, especially Swedish banks, due to the construction of the risk weight formula. The maturity assumptions in Pillar 1 also introduce incentives for the banks to shorten the contracted maturity, regardless of the actual maturity and expectations of extensions. FI believes that such incentive effects are inappropriate since they can result in even larger differences between maturity assumptions that are used under Pillar 1 and actual maturities, and that the underestimation of the capital needs under Pillar 1 also becomes even more pronounced.

Pillar 1 calculations also do not take into account society's need for a stable credit supply and the risks that may arise if banks no longer are able to extend credits in such a manner that is in line with the borrower's reasonable expectations. Banks should face reasonably effective incentives to pursue long-term lending in order to decrease the risk that credit contractions during

economic downturns become too sharp. The capital requirements should therefore also take into account the need for the banks to have sufficient capital to provide credit to customers over a long period of time and across reasonable economic cycles.

This raises arguments that the total capital requirements, in addition to taking into account behavioural and expectational factors that result in actual maturity being longer than contracted maturity, may also need to take into account the stability risks, given that these may be amplified if the capital requirements only take into account contracted maturity. The capital requirements thereby can also ensure that capital is available to a greater extent for extensions than what is the case under Pillar 1. The incentives for shortening the contracted maturity that arise from the advanced approach for the calculation of capital requirements could also amplify such financial stability risks.

In FI's opinion, this requires additional capital requirements under Pillar 2. Different methods could be used to account for these risks and uncertainties. For example, an approach could allow for actual maturity for every exposure or type of exposure and take into account reasonable expectations and probability of extensions. FI makes the assessment at this point in time that a simple approach in line with that presented in this memorandum is sufficient. The choice of a maturity of 2.5 years is based on the standardised maturity that is used in the fundamental IRB approach. A more exact and systematic estimation of the actual maturity would be significantly more complicated, and there are no generally accepted methods for such an estimation. It is FI's opinion that the effects on the capital requirement that FI's proposed method would entail should cover most of the increase in the banks' capital requirements resulting from a more sophisticated approach to estimating actual maturity.

FI intends to apply the assumption that the maturity may never fall below 2.5 years in its supervisory capital assessment for banks that use the advanced approach. The banks that currently have received authorisation from FI to use an advanced approach to determine exposures to corporates are Nordea, Handelsbanken, SEB and Swedbank.

FI believes that there is only a need for a maturity floor for exposures to corporates. Capital requirements for exposures to households do not take into account maturity assumptions. Exposures to institutions are normally, in FI's opinion, relatively short-term in nature even when taking into account behavioural aspects, and they do not face the same needs and the same expectations of extensions.

## **3.2 Exemptions from the maturity floor**

### *3.2.1 Proposed exemptions*

FI is considering whether to allow for an exemption to the maturity floor for exposures with genuinely short maturities, since they are not associated with a

reasonable expectation of an extension. For example, this can apply to export and project financing and some forms of syndicated exposures as well as other types of exposures. FI is waiting on feedback from this memorandum before it determines if it is appropriate to specify such exemptions and, if it does, how they should be designed.

### *3.2.2 Reasons for the potential need for exemptions*

In cases where there are no reasonable expectations of extensions, the actual and contractual maturities can be considered to be the same. Thus, there is also no need for capital as a result of the maturity assumptions, in excess of the capital requirements in Pillar 1 for affected exposures. FI is therefore considering exemptions for such exposures in the calculation of the additional capital requirements under Pillar 2 for maturity assumptions.

FI believes that export and project financing differ from normal corporate financing in several respects, for example in that the borrower does not have the same need for and expectation of an extension of the loan. This means that the actual and contractual maturities are the same, and thus there is no need for additional capital requirements under Pillar 2 for maturity assumptions for such exposures. Similar arguments could be used for certain types of syndicated exposures to the extent the borrowers do not reasonably expect individual lenders to extend the exposure. FI is waiting for feedback from this memorandum before further specification of such exemptions.

## **4 Consequences of the proposal**

FI's proposed shortest maturity assumption of 2.5 years is expected to increase the total capital requirements of affected banks by between 0.2-0.7 percentage points. This estimate is based on the banks' own calculations used for the capital requirements from Q3 2015. The average impact on the total capital requirement is 0.5 percentage points.

The impact on the CET 1 capital requirement on average is 0.2-0.6 percentage points, with an average increase of 0.4 percentage points. This corresponds to 1-4 per cent of the banks' current total capital requirements.

**Diagram 2. Impact on the banks' total and CET 1 capital requirements under Pillar 2**

