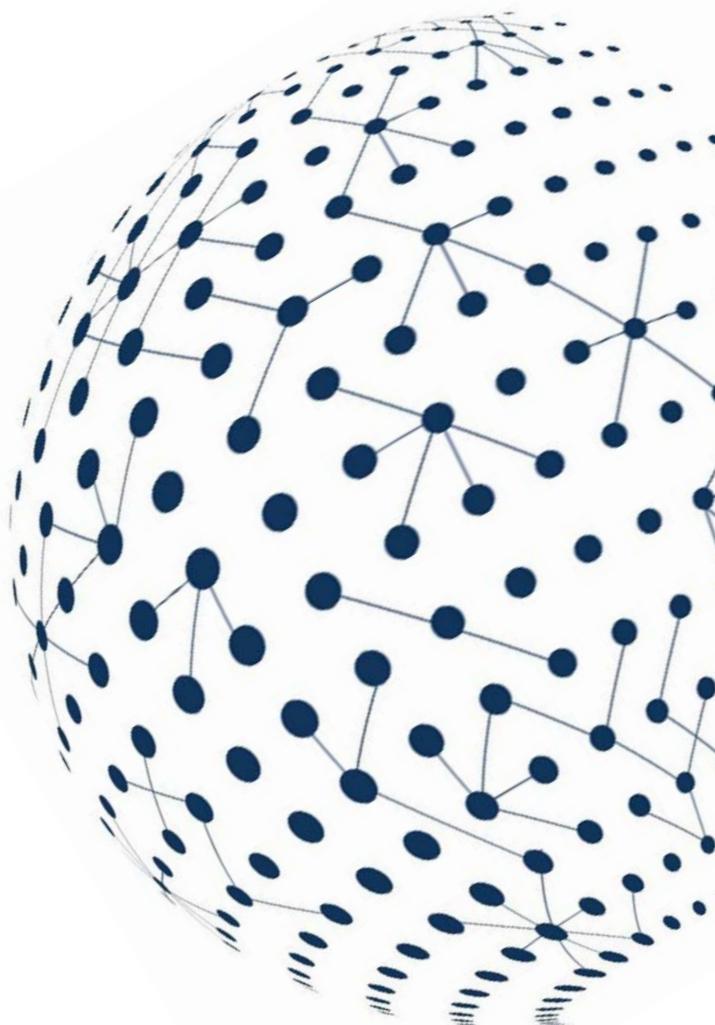




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## FSB Financial Stability Surveillance Framework



30 September 2021

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## Executive summary

The assessment of vulnerabilities affecting the global financial system is a core mandate of the FSB. Identifying material vulnerabilities facilitates monitoring by relevant public authorities and the preparation of policy actions to mitigate the financial stability risks posed by the vulnerabilities.

This report describes the framework used by the FSB to identify and assess global financial system vulnerabilities. The framework has recently been revised following the conclusion of work to enhance the FSB's financial stability surveillance. The purpose of the new framework is to increase the effectiveness of the FSB's vulnerabilities discussions, and improve the timeliness with which the discussions identify challenges to global financial stability.

The new surveillance framework aims to identify vulnerabilities in a proactive and forward-looking manner. It is based on systematic analysis that spans all parts of the global financial system. To serve the international remit of the FSB, the new framework provides a global, cross-border, and cross-sectoral perspective on current vulnerabilities that draws on the collective perspective of the FSB's broad membership. At the same time, the framework aims to capture new and emerging vulnerabilities in an evolving global financial system.

The framework embodies four key principles: focus on vulnerabilities that may have implications for global financial stability; scan vulnerabilities systematically and with a forward-looking perspective, while preserving flexibility; recognise differences among countries; and leverage the comparative advantages of the FSB while avoiding duplication of work.

The framework includes a common terminology – which defines key concepts such as vulnerabilities, shocks and resilience – as well as a common taxonomy of vulnerabilities. Providing a common basis for discussion, these elements aid shared understanding and consensus building around the identification and assessment of vulnerabilities in the FSB.

The framework focuses on vulnerabilities, the accumulation of imbalances in the financial system, as opposed to the shocks that may trigger those vulnerabilities. The framework also emphasises vulnerabilities that are common across countries or that may engender cross-border spillovers, which could interact with other vulnerabilities. However, in the event of a material shock, the approach has the flexibility to respond to the stress at hand while maintaining the surveillance of vulnerabilities.

The time horizon over which vulnerabilities materialise is important for policy, and therefore the framework also explicitly identifies global vulnerabilities that are currently material, those that may become material in the next 2 to 3 years, and those that may become material over a longer horizon.

The framework places particular emphasis on bringing multiple perspectives to bear in the assessment of current and emerging vulnerabilities. Accordingly, the framework draws on the collective perspective of the FSB's broad membership and utilises several different sources to build a picture of vulnerabilities. These sources include: analysis of surveillance indicators; regular surveys of FSB members and regional bodies; ongoing analysis by relevant FSB working groups; and periodic outreach to private sector participants. Drawing conclusions from these key inputs necessarily requires considered judgment.

Resilience, the capacity of the financial system to absorb shocks, is a vital concept for assessing vulnerability. Gauging resilience enables the picture of gross vulnerabilities to develop into a view on material net vulnerabilities, and on the stability of the financial system. Enhancing resilience assessments will be an ongoing priority of the FSB.

Once identified, material global net vulnerabilities should be subject to more intensive monitoring and analysis, and, as appropriate, policy dialogue among FSB committees. In addition, communication with the public about identified vulnerabilities offers important benefits. However, the FSB relies on a frank and open exchange among its members to fulfil its mandate and the external communication should not inhibit this. Therefore, the external communication will focus on the key messages from the internal vulnerabilities assessment. These messages will be included in future FSB Annual Reports and could also be communicated in other formats, for example in notes to the G20.

# 1. Conceptual framework

The assessment of vulnerabilities is a core mandate of the FSB, as defined in the FSB Charter, and a cornerstone in maintaining financial stability at the global level.<sup>1</sup> Identifying material vulnerabilities facilitates monitoring by relevant public authorities and the preparation of policy actions to mitigate the financial stability risks posed by the vulnerabilities. The overall objective of the framework is to enable comprehensive and forward-looking assessments of global vulnerabilities. In doing this, the framework has four key aims:

1. Increase the effectiveness of the FSB's vulnerabilities discussions;
2. Improve the timeliness with which the framework identifies challenges to global financial stability;
3. Build on the comparative advantages of the FSB's global perspective on financial stability issues; and
4. Contribute to the international policy dialogue.

The conceptual part of the framework is built around three pillars: (1) key principles; (2) a common terminology for vulnerabilities assessments and related discussions; and (3) a common taxonomy of vulnerabilities. These are discussed in turn below.

## 1.1. Key principles of the framework

The surveillance framework has been developed using four guiding principles:

### 1.1.1. *Focus on global vulnerabilities that may have implications for global financial stability*

The focus of the assessment is to identify vulnerabilities that may have adverse implications for the global financial system and thereby for economies. In practice, this means that the aim is to identify vulnerabilities that are common to a number of jurisdictions or have the potential to engender material cross-border spillovers.

One crucial part of the framework is the focus on vulnerabilities, rather than shocks. Vulnerabilities may increase the likelihood that a shock leads to systemic disruption in the financial system. Vulnerabilities can be measured to some extent, using appropriate indicators, and policy action can be taken to mitigate the financial stability implications. For example, research suggests that the build-up of leverage in credit booms can be tracked using indicators of indebtedness in the non-financial private sector. Shocks, on the other hand, are hard to predict and typically cannot be targeted by policy action in the same way. Potential shocks include a global pandemic, a sharp fall in asset prices, a sudden rise in interest rates, a significant deterioration in the economy, the failure of a significant financial institution, other developments outside the financial sector, and so on. It may be possible to more accurately estimate the impact

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<sup>1</sup> For more information, see the [FSB Charter](#).

of a shock, conditional on it happening, through an understanding of the vulnerabilities that it might trigger and the transmission channels that can propagate a shock.

Recent experience with the onset of the pandemic provides an excellent illustration of this difference between vulnerabilities and shocks. While it was possible to spot over-valuation in asset prices and liquidity mismatches in some parts of the non-bank financial sector, the onset of a global pandemic was not a commonly cited risk at the start of 2020.

#### *1.1.2. Scan vulnerabilities systematically and with a forward-looking perspective, while preserving flexibility*

The framework aims to engender a systematic, disciplined review of vulnerabilities. Specifically, it includes a set of procedures for each vulnerabilities assessment that helps ensure a comprehensive review of the global financial system. Furthermore, as vulnerabilities should not be viewed in isolation, potential interactions and correlations among vulnerabilities are taken into account.

At the same time, the framework promotes a forward-looking approach by clarifying the time horizons over which vulnerabilities might become more material. Vulnerabilities are subdivided between those that are judged to be: (1) currently material; (2) medium-term vulnerabilities that could become material in the next 2-3 years; and (3) emerging vulnerabilities that could become material in 3-5 years' time – and for which attention could otherwise get crowded out by shorter-term issues and concerns. In practice, this means that emerging vulnerabilities are explicitly recognised in the different stages of the assessment process, including the gathering of inputs, the preparation of analytical material, the presentation of the analysis and the discussions based on the assessment.

#### *1.1.3. Recognise differences among countries*

Given the FSB's diverse membership, differences across member jurisdictions are taken into account. This means that the assessments recognise key ways in which countries' financial systems, macroeconomic policy frameworks and institutional structures differ, and the implications this may have for the relative importance of vulnerabilities.

In particular, some categories of vulnerabilities may be more relevant for emerging market economies (EMEs) than for advanced economies (AEs), and the analysis allows for comparisons within distinct EME and AE categories, where relevant. However, the same methodological approach applies to all jurisdictions.

#### *1.1.4. Leverage the comparative advantages of the FSB while avoiding duplication of work*

Many FSB members carry out and publish financial stability assessments. The FSB's vulnerabilities assessments build on this work, with a focus on issues that are most relevant for global financial stability. In doing so, the assessments aim to reflect the collective views of FSB members on vulnerabilities, as well as to leverage the specific expertise and different perspectives of its member institutions.

## 1.2. Common terminology

A common terminology facilitates discussions of financial stability issues and is therefore an important element of the framework (key definitions are highlighted in Box 1).

### Box 1. Glossary of Terms

The **global financial system** consists of financial intermediaries, markets, and instruments as well as infrastructure that supports their activities. It also includes participants such as central banks and regulatory authorities, as well as providers of services that support financial activities.

**Financial stability** is the capacity of the global financial system to withstand shocks, containing the risk of disruptions in the financial intermediation process and other financial system functions that are severe enough to adversely impact the real economy.

A **shock** is an event that may lead to disruption or failure in part of the financial system.

A **vulnerability** is a property of the financial system that: (i) reflects the accumulation of imbalances, (ii) may increase the likelihood of a shock, and (iii) when acted upon by a shock, may lead to systemic disruption.

**Propagation mechanisms** are the channels through which financial vulnerabilities cause disruption, given the occurrence of a shock.

**Resilience** is the capacity of a financial system to absorb shocks and prevent them from leading to an unravelling of the accumulated imbalances.

### 1.2.1 Vulnerabilities and resilience: gross and net picture

The relationship between vulnerabilities, resilience and financial stability has important implications for the assessment of vulnerabilities. Gross vulnerabilities are first identified separately, then the gross vulnerabilities are compared with an appraisal of resilience to identify the net vulnerabilities (Figure 1).

Vulnerabilities assessment

Figure 1



Source: FSB

Distinguishing between gross vulnerabilities, resilience and net vulnerabilities helps ensure that all properties of the financial system are systematically examined and presented in the assessment. The approach also allows for a more focussed discussion of policy options to

address the identified net vulnerabilities by allowing a more transparent assessment of where gaps exist between gross vulnerabilities and resilience (including existing mitigants such as policy measures).

Nevertheless, it is not always straightforward to separate vulnerabilities and resilience. Resilience does not only depend on specific, identifiable policy measures, but also on factors such as market practices, behavioural responses and the interplay between different parts of the financial system under stress. Work is ongoing at the FSB to further refine methods for measuring and assessing the resilience of the global financial system.

### 1.3. Common taxonomy of vulnerabilities

A common taxonomy is used in the framework to form the basis of a comprehensive and systematic assessment of the main vulnerabilities in the global financial system. The common taxonomy is presented in the Vulnerabilities Matrix (Table 1). The matrix is divided into two parts – the financial sector and the non-financial sector (households, non-financial corporates and sovereigns).

#### 1.3.1. *Financial sector*

In the financial sector there are three main sub-sectors, which are the columns of the matrix:

1. Financial markets;
2. Banks; and
3. Other financial institutions – i.e. non-bank financial intermediaries (including money market funds, open-ended funds, insurance companies, pension funds, etc.) and financial market infrastructures (such as central counterparties, payment systems and securities settlement systems).

The rows of the matrix are based on eight different types of vulnerabilities:

1. Asset prices (mispricing, exposure to asset prices, etc.);
2. Asset quality (of securities, bank loans, etc.);
3. Funding or liquidity (duration and liquidity mismatches, etc.);
4. Leverage (balance sheet borrowing, synthetic leverage via derivatives, etc.);
5. Domestic inter-connections & complexity (common exposures, complex products, etc.);
6. Cross-border inter-connections (foreign exposures, foreign currency funding, etc.);
7. Operational vulnerabilities (including exposure to cyber-attacks); and
8. Other vulnerabilities (that do not neatly fit into the other categories).

**Table 1: Vulnerabilities Matrix - Financial sector vulnerabilities**

	Financial markets	Banks	Other financial institutions <sup>2</sup>
<b>Asset prices (financial and real)</b>	<ul style="list-style-type: none"> <li>Mispricing (low risk-free rates, low credit spreads, high equity market valuations)</li> </ul>	<ul style="list-style-type: none"> <li>Exposure to marked-to-market losses and volatility</li> <li>Incomplete hedging</li> <li>Inability to levy capital</li> <li>Collateral values (incl. potential over-valuation)</li> </ul>	<ul style="list-style-type: none"> <li>Exposure to marked-to-market losses and volatility</li> <li>Incomplete hedging</li> <li>Inability to levy capital</li> <li>Collateral values (incl. potential over-valuation)</li> </ul>
<b>Asset quality</b>	<ul style="list-style-type: none"> <li>Issuance of riskier securities</li> <li>Securitisation</li> <li>Defaults and ratings downgrades</li> </ul>	<ul style="list-style-type: none"> <li>Exposures to riskier segments (e.g. non-financial corporates (NFCs) with foreign exchange (FX) debt; real estate; commodities)</li> <li>Concentration</li> <li>Lending standards</li> <li>Forbearance</li> </ul>	<ul style="list-style-type: none"> <li>Exposures to riskier segments (e.g. NFCs with FX debt; real estate; commodities)</li> <li>Concentration</li> <li>Lending standards</li> <li>Financial health of FMI participants</li> </ul>
<b>Funding / liquidity</b>	<ul style="list-style-type: none"> <li>Amplification mechanisms</li> <li>Disruptions in liquidity allotment</li> <li>Volatility</li> </ul>	<ul style="list-style-type: none"> <li>Duration mismatch</li> <li>Liquidity mismatch</li> <li>Reliance on wholesale market funding</li> </ul>	<ul style="list-style-type: none"> <li>Liquidity mismatch (e.g. open-end bond funds)</li> <li>Duration mismatch</li> <li>Reliance on wholesale market funding</li> <li>Higher than expected insurance payouts (e.g. repeated catastrophic events)</li> </ul>
<b>Leverage</b>	<ul style="list-style-type: none"> <li>Amplification mechanisms</li> </ul>	<ul style="list-style-type: none"> <li>Low bank capital</li> <li>Off-balance sheet assets, leverage</li> <li>Synthetic leverage</li> <li>Low capacity to generate capital organically</li> </ul>	<ul style="list-style-type: none"> <li>Low capital</li> <li>Off-balance sheet assets, leverage</li> <li>Synthetic leverage</li> <li>Inadequate default fund at central counterparties (CCPs)</li> </ul>

<sup>2</sup> Including non-bank financial intermediaries and financial market infrastructures.

	Financial markets	Banks	Other financial institutions <sup>2</sup>
<b>Domestic inter-connections and complexity</b>	<ul style="list-style-type: none"> <li>• Amplification mechanisms</li> </ul>	<ul style="list-style-type: none"> <li>• Critical functions / too big to fail (TBTF)</li> <li>• Inter-bank funding</li> <li>• Uncleared over the counter (OTC) derivative exposures</li> <li>• Complex products</li> <li>• Common exposures / business models</li> </ul>	<ul style="list-style-type: none"> <li>• Critical functions / TBTF (e.g. CCPs)</li> <li>• Inter-financial claims</li> <li>• Uncleared OTC derivative exposures</li> <li>• Complex products</li> <li>• Common exposures/ business models</li> </ul>
<b>Cross-border inter-connections</b>	<ul style="list-style-type: none"> <li>• Exposure to foreign counterparties</li> <li>• Foreign investor activity in domestic equity, bond and derivative markets</li> </ul>	<ul style="list-style-type: none"> <li>• Cross-border activity</li> <li>• Currency mismatches</li> <li>• Use of offshore wholesale funding</li> <li>• Deposit dollarization</li> <li>• Foreign counterparties (e.g. hedging)</li> </ul>	<ul style="list-style-type: none"> <li>• Cross-border activity</li> <li>• Currency mismatches</li> <li>• Use of offshore wholesale funding</li> <li>• Foreign counterparties (e.g. hedging)</li> <li>• Use of foreign-domiciled, or foreign-owned, FMIs</li> </ul>
<b>Operational vulnerabilities (including cyber/IT)</b>	<ul style="list-style-type: none"> <li>• Poor governance / risk culture</li> <li>• Reliance on third-party service providers</li> <li>• Amplification mechanisms</li> <li>• Widespread use of inappropriate benchmarks e.g. Libor</li> </ul>	<ul style="list-style-type: none"> <li>• Poor governance / risk culture</li> <li>• Reliance on third-party service providers</li> <li>• Exposure to products hedging these risks</li> <li>• Widespread use of inappropriate benchmarks e.g. Libor</li> </ul>	<ul style="list-style-type: none"> <li>• Poor governance / risk culture</li> <li>• Reliance on third-party service providers</li> <li>• Widespread use of inappropriate benchmarks e.g. Libor</li> </ul>
<b>Other vulnerabilities</b>	<ul style="list-style-type: none"> <li>• Other financial sector vulnerabilities that do not fit neatly into other categories, including emerging vulnerabilities</li> </ul>		

### **1.3.2. Non-financial sector**

In the non-financial sector, there are also three main sub-sectors:

1. Households;
2. Non-financial corporations; and
3. Sovereigns.

Three types of vulnerability can be identified for the non-financial sector:

1. Borrowing;
2. Assets (overvaluation or exposure to assets); and
3. Other vulnerabilities (that do not neatly fit into the other categories).

The examples of the types of vulnerabilities in the matrix are not supposed to be comprehensive. Rather, the aim is to guide thinking about vulnerabilities that exist in the financial system and how they can be categorised.

**Table 2: Vulnerabilities Matrix - Non-Financial sector vulnerabilities**

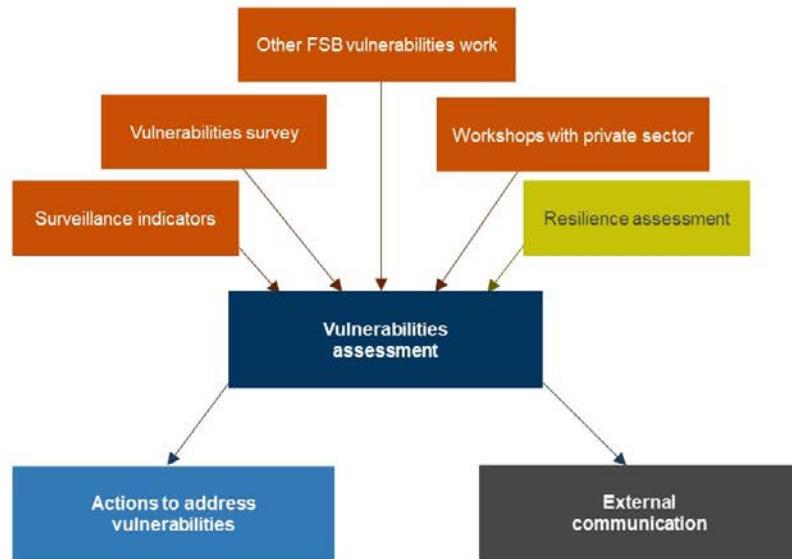
	<b>Households</b>	<b>Non-financial corporates</b>	<b>Sovereigns</b>
<b>Borrowing</b>	<ul style="list-style-type: none"><li>• High level of debt</li><li>• High debt service ratio</li><li>• Currency mismatches</li></ul>	<ul style="list-style-type: none"><li>• High level of debt</li><li>• High debt service ratio</li><li>• High level of debt to rollover in the short-term</li><li>• Currency mismatches</li><li>• Use of offshore funding</li></ul>	<ul style="list-style-type: none"><li>• High level of debt</li><li>• High debt service ratio</li><li>• High level of debt to rollover in the short-term</li><li>• Currency mismatches</li><li>• Significant foreign investor base in debt</li></ul>
<b>Assets</b>	<ul style="list-style-type: none"><li>• Overvaluation</li><li>• Exposure to foreign assets</li></ul>	<ul style="list-style-type: none"><li>• Overvaluation</li><li>• Exposure to foreign assets</li></ul>	
<b>Other vulnerabilities</b>		<ul style="list-style-type: none"><li>• Other non-financial sector vulnerabilities that do not fit neatly into other categories, including emerging vulnerabilities</li></ul>	

## 2. Operational framework

This section discusses how the conceptual framework discussed above has been operationalised in order to produce the FSB's vulnerabilities assessments (Figure 2).

**Operational framework**

**Figure 2**



Source: FSB

### 2.1. Inputs for the vulnerabilities assessment

Drawing on multiple perspectives is likely to be more effective than any single approach and so information is systematically gathered in several ways, including through:

1. A set of surveillance indicators;
2. A qualitative vulnerabilities survey;
3. Inputs from relevant work in other FSB working groups; and
4. Workshops with private sector participants.

These four different inputs, together with an assessment of resilience, are then used as the basis for an internal vulnerabilities note. The note is discussed by the Standing Committee on the Assessment of Vulnerabilities (SCAV), which was established to monitor and assess vulnerabilities affecting the global financial system, and then circulated to the Plenary, the sole decision-making body of the FSB.<sup>3</sup>

<sup>3</sup> For more information on the SCAV and the Plenary, see the [FSB Charter](#).

## 2.2. Surveillance indicators

A first input into the vulnerabilities assessment is a set of surveillance indicators. These indicators provide a quantitative assessment to complement the qualitative information collected in the vulnerabilities survey. The indicators aim to provide a reading on vulnerabilities and how they have changed since the previous assessment.

The indicators are designed to help gauge vulnerabilities in the different cells of the Vulnerabilities Matrix (Table 1), though given the extent of the matrix it is not always possible to include indicators for every cell. While the set of indicators is quite large in aggregate, the idea is to be relatively parsimonious in the choice of indicators within a cell of the matrix.

It is important to note that the indicators are expected to evolve over time. Indicators may need to be dropped or amended as their performance is assessed, and they might be replaced by alternative indicators as they are developed. Moreover, novel indicators may need to be created to measure new vulnerabilities that emerge.

## 2.3. Vulnerabilities survey

A second input into the assessment is the vulnerabilities survey. The survey gathers the views of SCAV members, as well as those jurisdictions in the Regional Consultative Groups (RCGs), on the top vulnerabilities they have identified. These are vulnerabilities that, in their view, could threaten global or domestic financial stability, based on their potential impact (rather than likelihood). The survey allows the extensive financial stability analysis already undertaken by national authorities and international organisations to be leveraged and summarised in an efficient manner.

It is acknowledged that the survey responses will, by their nature, be subjective. For example, there is subjectivity in assessments of whether a vulnerability could result in a significant disruption to the global financial system, or the extent to which mitigants may reduce the degree of a particular vulnerability. Furthermore, respondents may have different views on the type and potential impact of vulnerabilities that might be relevant. However, the aim of the survey is to gather information on all of the different views on vulnerabilities of the participating institutions as an input into the overall assessment.

The current version of the survey asks for views on respondents' top global and domestic or regional vulnerabilities, in terms of financial stability impact, that are currently material or could become material over the next 3 years. It also asks about emerging vulnerabilities that could become material over the next 3-5 years.

## 2.4. FSB analytical work and workshops with private sector participants

In order to ensure that the assessment incorporates the full range of work on financial system vulnerabilities that is being carried-out, inputs from relevant areas of analytical work within the FSB – such as on non-bank financial intermediation and financial innovation – will also be included in the vulnerabilities assessment, as appropriate.

Another way of obtaining information for the vulnerabilities assessment is through workshops with the private sector. The aim of the workshops is to seek external stakeholders' views on the main vulnerabilities in the global financial system. Private sector views are usually sought once a year, though more frequent discussions with market participants may be desirable in periods of stress. The key messages from the workshops will be included in the vulnerabilities assessment.

## 2.5. Overall vulnerabilities assessment

The overall assessment, comprising a discussion of gross vulnerabilities and resilience to arrive at net vulnerabilities, is brought together in an internal FSB note. Given the diverse inputs and the fact that they may point toward differing conclusions about financial stability, the overall assessment will ultimately be based on expert judgment.

The internal note is prepared by the Analytical Group on Vulnerabilities (AGV), a working group set-up by the SCAV to analyse global vulnerabilities, before being discussed by the SCAV and the Plenary.

## 3. The FSB's use of the framework

The FSB's surveillance framework is used to identify and assess vulnerabilities in the global financial system. On completion, the assessment is used in two main ways by the FSB: to decide on follow-up actions; and to communicate views on vulnerabilities externally.

One follow-up action is that identified material global net vulnerabilities should be subject to more intensive monitoring and analysis and the SCAV will decide how this is taken forward. In a second type of action, the SCAV may propose that the Plenary initiates a policy dialogue in the relevant committees on possible policy action to address the key vulnerabilities highlighted by the assessment.

Communication with the public about vulnerabilities offers important benefits. This can facilitate vulnerabilities discussions at the national level, enable an informed debate among policy makers on how to best address vulnerabilities, and inform market participants about the build-up of global vulnerabilities. However, the FSB relies on a frank and open exchange among its members to fulfil its mandate and the external communication should not inhibit this. Therefore, the external communication will focus on the key messages from the internal vulnerabilities assessment. These messages will be included in future FSB Annual Reports and could also be published in other formats, for example in notes to the G20.