SMEs financial report in Spain: Easy XBRL with open source Excel VBA

22nd EuroFiling workshop
Techies Track

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XBRL WEEK, FRANKFURT
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SMEs financial report in Spain

2016

XBRL ESPAÑA
THE BUSINESS REPORTING STANDARD

16th XBRL Europe Day

2nd of February 2016

Legal Spanish use case for XBRL: Credit Institutions rating SMEs
DEMO

Iñaki Vázquez
Spanish Business Registers – XBRL Spain

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SME Benchmark Credit Risk Reports in Spain

Posted on February 5, 2016 by **Dave Nitchman**

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OpenFiling – SME Credit rating tool

SMEs financial report in Spain

SME financial report in Spain:

a user´s case of XBRL to harmonise risk assessment

XBRL Europe Day

ECB. Frankfurt, 1 June 2016

Manuel Ortega
Head of Central Balance Sheet Data Office Division. Banco de España
Chairman of ERICA (European Records of IFRS Consolidated Accounts) WG, of ECCBSO
Representative of Banco de España in XBRL Spain

1. **Presentation of the project**
   - ❑ **Legal precedent**
   - ❑ **Report "SME financial information"**
   - ❑ **Risk assessment methodology**

2. **Experience in Spain (databases and XBRL)**

3. **Technical solution for financial institutions**

XBRL Import

BANCO DE **ESPAÑA**
Eurosistema

Carga datos manual | Carga fichero XBRL | Limpiar Formulario

Hoja de carga de datos de la empresa

Identificación
Denominación social
NIF
CNAE
AÑO   N

Activo

Clave	Partida	Importe (uds)
11700	Deudores comerciales no corrientes	
12200	Existencias	
12380	Clientes por ventas y prestaciones de servicios [(1)]	
12370	Accionistas (socios) por desembolsos exigidos	
12400	Inversiones en empresas del grupo y asociadas a corto plazo	
12500	Inversiones financieras a corto plazo	
12700	Efectivo y otros activos líquidos equivalentes	
10000	Total activo (= Total patrimonio neto y pasivo)	

Excel file with XBRL api (developed by XBRL Spain and Banco de España): a harmonised automated solution

1. Company data, two options:
   1. *Manual typing on the Excel*
   2. *Import of XBRL file officially deposited in the Mercantile Register*

SMEs financial report in Spain

XBRL Import

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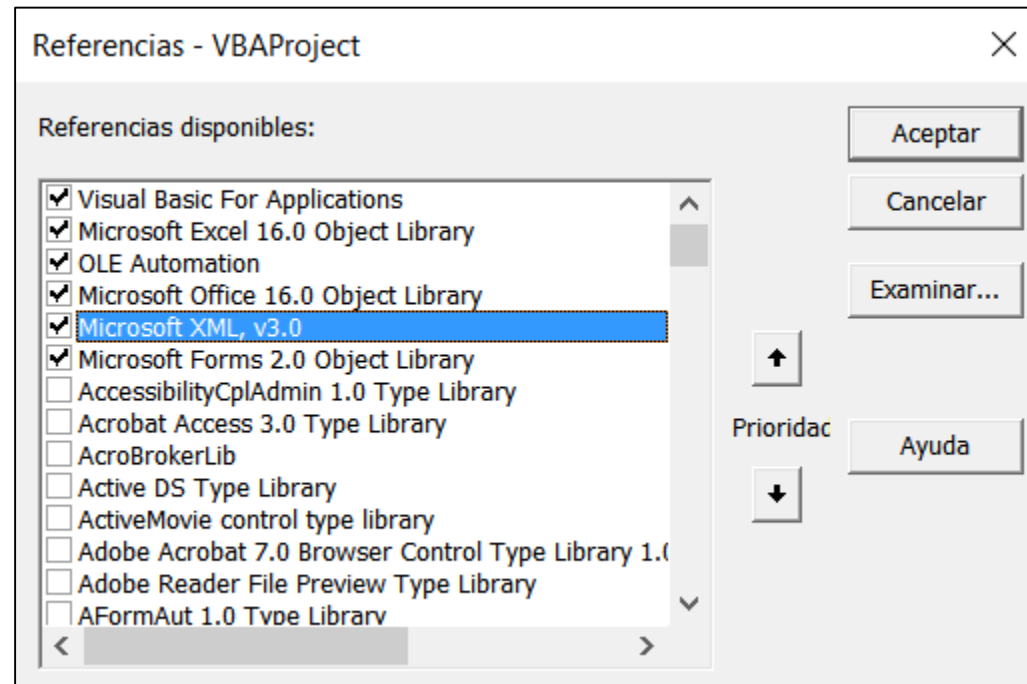
Microsoft® **Visual Basic®** for Applications ™

VBA (Visual Basic for Applications) is the name of the programming language of Excel.

Which XBRL libraries use?

▸ No need for special XBRL libraries, just
Microsoft XML, v3.0

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What is MSXML?

VBA Microsoft XML Core Services (MSXML) that allows users to build **XML-based applications** that provide a high degree of interoperability with other applications that adhere to the XML 1.0 standard.

Among the core services MSXML provides is developer support for the **Document Object Model (DOM)**, a standard library of application programming interfaces **(APIs) for accessing XML documents**.

Reading XBRL instances with MSXML

- ▸ XBRL instance document
  MSXML2.DOMDocument

- ▸ Elements
  MSXML2.IXMLDOMNodeList
  MSXML2.IXMLDOMNode

- ▸ Attributes
  MSXML2.IXMLDOMAttribute

What is MSXML?

```vb
'Spanish GAAP XBRL instance Excel viewer
'This code has been created by XBRL Spain, based on open source principles
'Free use, modification, copy and distribution
'
'Developed in Madrid, July 2011
'Contact: info@xbrl.es
'

Sub CargarInformeXBRL()

    ' Documento XBRL
    Dim xmlDom As MSXML2.DOMDocument

    ' Nodo
    Dim nodo As MSXML2.IXMLDOMNode

    ' Contexto
    Dim contexto As MSXML2.IXMLDOMNode

    ' Hijos de contexto
    Dim hijoContexto As MSXML2.IXMLDOMNode

    ' Periodo
    Dim periodo As MSXML2.IXMLDOMNode

    ' Lista de link_schemaRef
    Dim listaLink_schemaRef As MSXML2.IXMLDOMNodeList

    ' link_schemaRef
    Dim link_schemaRef As MSXML2.IXMLDOMNode

    ' Atributo link_schemaRef
    Dim atributo_link_schemaRef As MSXML2.IXMLDOMAttribute

    ' Hijos de Periodo
    Dim hijoPeriodo As MSXML2.IXMLDOMNode
```

Reading XBRL instances with MSXML

▸ Create variables

```
' Documento XBRL
Dim xmlDom As MSXML2.DOMDocument

' Nodo
Dim nodo As MSXML2.IXMLDOMNode

' Contexto
Dim contexto As MSXML2.IXMLDOMNode

' Hijos de contexto
Dim hijoContexto As MSXML2.IXMLDOMNode

' Periodo
Dim periodo As MSXML2.IXMLDOMNode

' Lista de link_schemaRef
Dim listaLink_schemaRef As MSXML2.IXMLDOMNodeList
```

▸ Create an array with *qnames*

```
' Creamos un array con los items de las cuentas
Arr(0) = "pgc-07-c-bs:ActivoNoCorriente"
Arr(1) = "pgc-07-c-bs:ActivoNoCorrienteInmovilizadoIntangible"
Arr(2) = "pgc-07-c-bs:ActivoNoCorrienteInmovilizadoMaterial"
Arr(3) = "pgc-07-c-bs:ActivoNoCorrienteInversionesInmobiliarias"
Arr(4) = "pgc-07-c-bs:ActivoNoCorrienteInversionesEmpresasGrupoEmpresasAsociadasLargoPlazo"
Arr(5) = "pgc-07-c-bs:ActivoNoCorrienteInversionesFinancierasLargoPlazo"
Arr(6) = "pgc-07-c-bs:ActivoNoCorrienteActivosImpuestoDiferido"
Arr(7) = "pgc-07-c-bs:ActivoNoCorrienteDeudasComercialesNoCorriente"
Arr(8) = "pgc-07-c-bs:ActivoCorriente"
Arr(9) = "pgc-07-c-na:ActivoCorrienteActivosNoCorrientesMantenidosParaVenta"
Arr(10) = "pgc-07-c-bs:ActivoCorrienteExistencias"
```

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Reading XBRL instances with MSXML

▸ Open the XBRL instance and get the entry point

```
' Ruta del informe XBRL
Dim strNombreArchivo

'diálogo para abrir obtener la ruta del informe XBRL
strNombreArchivo = Application.GetOpenFilename
If strNombreArchivo = False Then Exit Sub

' Crea un nuevo contenedor para el informe XBRL
Set xmlDom = New MSXML2.DOMDocument

' Carga el informe XBRL
xmlDom.Load strNombreArchivo

' Una vez hemos seleccionado el informe, limpiamos el formulario
LimpiarFormulario

' Buscamos el modelo al que hace referencia el informe
Set listaLink_schemaRef = xmlDom.selectNodes("/xbrl/link:schemaRef")
If listaLink_schemaRef.Length = 0 Then
    Set listaLink_schemaRef = xmlDom.selectNodes("/xbrli:xbrl/link:schemaRef")
End If
```

Reading XBRL instances with MSXML

▸ Read all the contexts and get the periods reported

```
' Se crea un listado con todos los contextos del informe XBRL
Set listaContextos = xmlDom.selectNodes("/xbrl/context")
If listaContextos.Length = 0 Then
    Set listaContextos = xmlDom.selectNodes("/xbrli:xbrl/xbrli:context")
End If

' Año que vamos a obtener del contexto
Dim anyoNumero As Integer

' Año actual
Dim anyoActual As Integer
anyoActual = 0

' Año anterior
Dim anyoAnterior As Integer
anyoAnterior = 0

' Buscamos el año actual y el año anterior dentro de los contextos
For Each contexto In listaContextos
    ' Iteramos por sus atributos
    For Each atributoContexto In contexto.Attributes
```

Reading XBRL instances with MSXML

▸ For every item in the array, read the value in the XBRL instance document and put it on the associated cell, depending on the reporting year

```
' Activo
BuscarItem xmlDom, Arr(7), listaContextos, 13, anyoActual, anyoAnterior
BuscarItem xmlDom, Arr(10), listaContextos, 14, anyoActual, anyoAnterior

' Si la instancia es del modelo PYMES, Abreviado o Mixto, la clave 12380
' se corresponde con "pgc-07-c-bs:ActivoCorrienteDeudoresComercialesOtrasCuentasCobrarClient
If (modelo <> "Normal") Then
    BuscarItem xmlDom, Arr(12), listaContextos, 15, anyoActual, anyoAnterior
End If

' Si la instancia es del modelo normal, la clave 12380 se corresponde con la suma de
' 12310 ("pgc-07-c-bs:ActivoCorrienteDeudoresComercialesOtrasCuentasCobrarClientesVentasPres
' +
' 12320 ("pgc-07-n:ActivoCorrienteDeudoresComercialesOtrasCuentasCobrarClientesEmpresasGrupo
If (modelo = "Normal") Then
    Arr(90) = "pgc-07-n:ActivoCorrienteDeudoresComercialesOtrasCuentasCobrarClientesEmpresas
'    BuscarItem xmlDom, , listaContextos, 15, anyoActual, anyoAnterior
End If
```

Reading XBRL instances with MSXML

▸ For every item in the array, read the value in the XBRL instance document and put it on the associated cell, depending on the reporting year

```
Private Sub BuscarItem(xmlDom As MSXML2.DOMDocument, item As String, listaContextos As MSXML2.IXMLDOMNo

    ' Listado de nodos
    Dim listaNodos As MSXML2.IXMLDOMNodeList

    ' Se buscan las dos ocurrencias del item
    Set listaNodos = xmlDom.selectNodes("/xbrl/" + item)
    If listaNodos.Length = 0 Then
        Set listaNodos = xmlDom.selectNodes("/xbrli:xbrl/" + item)
    End If

    ' Para cada una de las dos ocurrencias
    For Each nodo In listaNodos
            ' Vemos si tiene atributos
            If nodo.Attributes.Length > 0 Then
                ' Iteramos por sus atributos
                For Each atributoNodo In nodo.Attributes
                    ' Look for the "contextRef" attribute
```

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Demo

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Conclusions

▸ This XBRL import functionality it's oriented to Spanish GAAP XBRL taxonomy, but it can be adapted to any XBRL taxonomy with small effort

▸ No XBRL validation, just reading XBRL instances

▸ Open source. Reuse it!.

▸ Less than 800 lines of source code, fully documented

… in Spanish 🙈

Thank you!.

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