XBRL in Progress – Financial Reporting Policy Frameworks and their Effects on the Adoption of XBRL

Research Paper

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Abstract

Extensible Business Reporting Language (XBRL) is becoming ever more important as a global standard for machine readable presentation and exchange of financial and business information. As XBRL addresses the problems of data integrity, timeliness, and reusability, it is not surprising that many countries are adopting XBRL in their reporting frameworks. Considering the benefits provided by XBRL, several countries have already mandated XBRL reports or have started voluntary XBRL programs. This paper presents XBRL projects being currently carried out around the world, and scrutinizes existing policies and financial reporting frameworks to outline the progress of XBRL adoption. The findings suggest a great heterogeneity in the adoption of XBRL and identify the financial industry as a pioneer in adopting the new reporting standard. Further, the analysis reveals three factors dominating the XBRL uptake: (1) the perceived benefits, (2) the organizational readiness, and (3) the external pressure. It can be expected that the relevance of XBRL will increase in the upcoming years and will become a stadard financial reporting framework across countries and industries.

1 Introduction

The Internet has changed the requirements on financial reporting of publicly listed companies. Currently, financial reporting is confronted with the limitations of static, paper-based reporting, and a lack of interactive data. Web-based communication of financials is often only an extension of print documents as pdf or html source. Annual reports are standardized according to the motto "one size fits all". This approach neglects the heterogeneity of the audience. Investors, consumers, employees or regulatory agencies: every stakeholder group has differing information needs, and it is difficult to meet these needs by one standardized financial report (Kovarova-Simecek & Pellegrini, 2016).

To overcome these shortcomings the standard eXtensible Business Reporting Language (hereafter XBRL), a scripting language based on XML, has been developed. Bergeron (2003, p. 15) defines

XBRL as "an open, platform-independent, international standard for the timely, accurate, efficient, and cost-effective electronic storage, manipulation, repurposing, and communication of financial and business reporting data". According to Premuroso and Bhattacharya (2008, p. 5) this standard aims at reducing information asymmetry resulting from incompatible global reporting formats and semantics. XBRL, therefore, is used to increase the usability of financial data for different purposes in the reporting process (Kovarova-Simecek & Pellegrini, 2016, p. 240).

Since its inception in 1994, XBRL has experienced a continuous development worldwide (Roufaniel & Roufaniel, 2013, p. 127). Currently, there are 23 jurisdictions, of which 13 at European level, operating the adoption of XBRL for business reporting, taxonomy development, and on providing education and training (xbrl.org, 2017). Despite of the advantages of XBRL compared to the possibilities provided by alternative technical standards, the initiatives set so far remain mostly isolated. In order to achieve a comprehensive diffusion, further efforts are necessary.

According to a study conducted by Kovarova-Simecek & Pellegrini (2016, p. 243) on the voluntary uptake of XBRL by companies is lagging behind. Private initiatives to implement XBRL hardly exist and cannot be expected. Since international investors tend to prefer companies and stock markets that answer investors' and stakeholders' demand for new financial reporting standards, neglecting the demand for new reporting standards such as XBRL might weaken a company's position in the stock market and in the public perception (ibid., p. 250).

If new information technologies should be adopted for more accurate, reliable and customized financial reporting, additional initiatives seem to be necessary to enhance the adoption of XBRL in private companies (ibid., p. 249). Therefore this paper scrutinizes current European and US XBRL projects, existing policies, and financial reporting frameworks and tries to analyse reasons for voluntary and mandatory XBRL uptake while taking macroeconomic contexts into account. Furthermore, the paper presents advantages perceived by countries and industries which use XBRL voluntarily. In order to outline the progress of XBRL adoption the research questions of this paper are:

RQ1: Which countries and industries adopt XBRL?

RQ2: What are the motivations and expectations of the policy advocates towards the voluntary or mandatory adoption of XBRL?

RQ3: What are the differences of the policies applied?

RQ4: Are there any organizational, economic, or social impacts of XBRL adoption?

2 Literature Review

According to Zhu & Whu (2011, p. 129) the aim of data standards is to make data elements of different financial statements comparable. For this purpose in the United States of America (partly U.S. hereafter) the Securities and Exchange Commission (SEC, hereafter) began in 2005 its Interactive Data Voluntary Program, which encouraged SEC registrants to voluntarily submit XBRL-formatted files as exhibits to periodic reports (Premuroso & Bhattacharya, 2008, p. 2). Later, in 2009, SEC has started to use XBRL as mandatory reporting standard for electronic records (SEC, 2009). In doing so, it stimulated the steady uptake of XBRL among US publicly listed companies. In consequence, numerous local consortia around the globe are promoting the adoption of XBRL.

Therefore, in the last decade XBRL has been a fertile and productive area of research (Alles & Debreceny, 2012, p. 89). Baldwin and Trinkle (2011) took a close look at the possible and probable

impact of XBRL on financial reporting in the future. For this purpose, they conducted a Delphi panel. The Delphi survey suggests that "XBRL is very likely to impact corporations, financial reporting, users of financial reports, and auditing. The most likely impacts of XBRL include increased accessibility of financial reports, easier regulatory compliance, enhanced availability of financial reports, facilitation of continuous reporting, and improved efficiency in investment and business decision making." (ibid., p. 1). Further, **Alles and Piechocki** (2012) emphasized the potential of XBRL to improve corporate governance. The results of their literature review show that XBRL maximizes the data input into the information value chain and provides users of financial information with perfectly tagged data. Hence, XBRL supports superior decision making (ibid., p. 24-26).

When it comes to XBRL adoption, mandatory and voluntary uptake needs to be distinguished. Some studies were conducted concerning the XBRL mandate. **Kim, Lim and No** (2012) examined the effect of mandatory XBRL disclosure across various aspects of the financial information environment. Their findings suggest that XBRL has the potential to mitigate information risk and information asymmetry through improved transparency. Thus, their findings are consistent with the notion that XBRL disclosure provides value-relevant information to the capital market by enhancing the transparency of corporate information (ibid., p. 150). **Liu, Wang and Yao** (2014) investigated the benefits of mandatory XBRL adoption in the United States. Their results show a positive association between XBRL usage and analyst coverage as well as analyst forecast accuracy. The findings indicate that the mandatory adoption of XBRL may potentially improve the accessibility and usability of financial data which helps analysts make credible forecast (ibid., p. 69). Also the results of a study conducted by **Liu and O'Farrell** one year before (2013) showed that the adoption of XBRL positively influences the accuracy of forecasts because of better transparency and higher quality of financial information (ibid., p. 302-308).

More studies have been conducted to analyse the voluntary adoption of XBRL. **Premuroso and Bhattacharya** (2008) examined whether early and voluntary filers of financial information in XBRL format demonstrate superior corporate governance and operating performance relative to their non-adopting peers. The findings suggest that early and voluntary XBRL adoption is indeed an indicator of superior corporate transparency and related corporate governance which are expected to constitute an advantage for these firms in the long run. They also found that firm performance factors including liquidity and firm size are associated with the early and voluntary XBRL filing decision (ibid., p. 17-19). **Bonsón, Cortijo and Escobar** (2009) investigated why some companies use XBRL voluntarily. They conducted a Delphi panel showing that companies, on the one hand, are deterred from using XBRL since it is difficult to see the potential of XBRL before it is fully adopted. On the other hand, companies are motivated to use XBRL because of the strong position the SEC took in favour of XBRL and the related investments that were made which in return led to a bigger visibility of those companies that already used XBRL. The survey identifies getting a deeper knowledge of XBRL as well as a better company reputation and image as important factors concerning the voluntary implementation of the technology. The survey also shows that as long as XBRL was not compulsory in the United States it was not possible to reach a broad diffusion of the technology within the States (ibid., p. 200-203). **Ragothaman** (2012) analysed the relationship between firm characteristics and voluntary XBRL adopters. The results of his study indicate that Price-to-Earnings Ratio (PE ratio), inventory ratio, and plant intensity (political costs) are useful in distinguishing voluntary XBRL adopters from non-adopters. Firms with higher growth potential as measured by PE ratio are expected to embrace voluntary disclosures. Firms with higher inventory ratios are more complex and more technologically adept. Hence these firms are more likely to invest in new technologies and would be

more likely to adopt XBRL voluntarily. Ragothaman also confirms prior results with respect to firm size. Voluntary XBRL adopters are larger in size than non-adopters (ibid., p. 111 ff.). Also **Kaya** (2014) investigated the influence of several firm-specific characteristics on the extent of voluntary disclosure in XBRL of US listed firms in the year 2008. His results confirm that firm size and firms' level of innovativeness are positively related to the extent of overall disclosures (ibid., p. 2). **Hao, Zhang and Fang** (2014) examined whether or not companies voluntarily filing in XBRL format enjoy a lower cost of capital. Their study suggests that firms voluntarily adopting XBRL are associated with an average reduction in cost of equity capital. Thus, the results provide evidence on the economic consequence of XBRL adoption (ibid., p. 86).

Still, existing literature suggests, that mandatory implementation is the most successful way to establish XBRL as a standard. **Felden** (2011) argues that a widespread diffusion of XBRL has never happened on a voluntary basis in any country so far (ibid., p. 170-183). **Cordery, Fowler and Mustafa** (2011) found that although companies could increase their market competitiveness through the use of XBRL, they are reluctant to finally adopt it. Hence they conclude that the government and regulators need to "push" XBRL onto organisations (ibid., p. 70-86). A study conducted by **Yingchun & Baohua** (2010) shows that the research on and the adoption of XBRL in China are still at lower stage than in US or Europe concluding that governmental force to promote the usage of XBRL technology in China is needed. But also support of software companies, accounting firms, news media, and other industries is crucial to improve disclosure quality of financial reporting on the internet (ibid., p. 608). **Chen** (2012) did a comparative case study to examine the e-government implementation of XBRL to increase efficiency and transparency in business and financial information. The sample included the U.S SEC's Interactive Data Project, the Netherlands's National Taxonomy Project (NTP), Australia's SBR project and Singapore's Business Reporting. The results of the case study underscore the importance of strategic alignment and program goals to achieve information efficiency and transparency. Another finding of the survey is that it is necessary to develop an incentive scheme for XBRL adoption. In addition an incremental strategy is recommended to manage a successful implementation. Therefore pilot projects, intense collaboration with stakeholders and phase-in implementation are useful (ibid., p. 556-562).

Bonsón et al. (2009) analysed how XBRL can be implemented successfully by mandate and voluntarily. The research indicates that both, mandatory and voluntary XBRL adoption, have their difficulties. When it comes to voluntary implementation companies need to get a lot of information about XBRL and its usage because if they do not understand the benefits XBRL offers, they will not be willing to use it. In contrast, if the application of XBRL is compulsory it is likely that the majority of companies will not really know much about the opportunities they have when using XBRL data. Due to this lack of knowledge the functionalities will not be used to the full advantage of the companies (ibid., p. 38 ff.). **Benson, et al.** (2015) found that especially accounting journals can contribute to company's knowledge of XBRL and its functions.

Studies reveal, that a main obstacle hindering the successful implementation of XBRL is the lacking of awareness and understanding of XBRL. A literature review conducted by **Gräning, Felden and Piechocki** (2011) reveals that medium-sized companies do not have enough knowledge and information about XBRL. Thus, as mentioned before, regulators as the SEC play an important role in promoting the implementation of XBRL (ibid., p. 226-232). **Pinsker** (2003) scrutinized XBRL awareness in auditing. He conducted a survey in the U.S. among accountants and auditors. His results indicate a lack of experience with and knowledge of XBRL in auditing and accounting. Further, the survey indicates that the sample respondents did not perceive the intended XBRL benefits (ibid., p.

735). Because research in the U.S. showed very low levels of awareness and understanding of XBRL, **Nel and Steenkamp** (2008) conducted a survey to determine the levels of awareness and understanding of XBRL in South Africa among chartered accountants. The results show that the majority of chartered accountants in South Africa are unaware of XBRL and few fully understand it (ibid., p. 91). Also the results of a study conducted by **Buys** (2008) show that the main factor that hinders the widespread adoption of XBRL in South Africa is the limited knowledge about what XBRL is and what its concrete functions are (ibid, p. 52).

Bonsón (2001) examined the role of XBRL in Europe by analysing the existing literature. His study indicates that the adoption of IAS and XBRL will allow communication of financial information in a homogeneous way. It will facilitate the interchange of data between software applications as well as the automatic analysis of financial information. Bonsón concludes that the adoption of IAS and XBRL are going to play an important role in the development of the global European Stock Market (ibid., p. 101). As a result of the regulation no. 1606/2002 the European Union requires companies listed on the European stock exchanges to prepare their consolidated financial statements in accordance with the International Financial Reporting Standards (IFRS). According to **Hannon** (2004, p. 55-56), the main reason for accelerating XBRL adoption in Europe is the convergence with IFRS. **Felden** (2011) investigated the characteristics of XBRL adoption in Germany. The study reveals that the more influence social groups which appreciate XBRL have within a company the more likely the adoption of XBRL is. Factors that hinder the implementation of XBRL are cost, complexity and missing pressure of the competitors. According to the results for a widespread diffusion of XBRL it is decisive to make XBRL adoption mandatory (ibid., p. 170-183). **Dunne et al.** (2013) investigated the diffusion of XBRL in the UK by using a questionnaire survey. The sample included accountants in business, tax practitioners, auditors and users of corporate reports. At the time the research was carried out no business respondent stated to produce XBRL-enabled financial statements and only 5% mentioned to have already discussed XBRL within the company. All stakeholder groups show a big lack of knowledge about XBRL. The survey also investigated factors hindering companies from adopting XBRL. It reveals that although stakeholder groups think that XBRL can be very useful the implementation of the standard is often neglected because of the time and effort that is needed to learn about XBRL, the costs of software and the feeling that there is no need for XBRL. Furthermore, the results show that the majority of stakeholders still ignore the advantages of XBRL and think it is not relevant to them. The planned diffusion of XBRL has not worked so far. Considering these results, again the only possible solution for a broad diffusion of XBRL seems to be that governments and regulators require XBRL as a mandatory standard (ibid., p171-180). **Troshani, Parker and Lymer** (2015) investigated the process of how XBRL was institutionalised in the UK. They found that although initial XBRL development work was undertaken by the local XBRL consortium in the UK (XBRL UK) membership of companies and organizational actors in this consortium remained limited. Instead regulatory intervention in relation to its adoption was necessary (ibid., p. 2015 f.). **Kovarova-Simecek and Pellegrini** (2016) conducted a survey which examines the state of XBRL diffusion and adoption among publicly listed Austrian companies, analysing supporting and inhibiting factors for its application and rejection. The results indicate – like in other countries – the awareness of the need of target-group oriented financial reporting and the high relevance of technical reporting standards in the future on the one hand. On the other hand, Austrian firms show a general lack of knowledge about XBRL and poor preparedness for the new technological requirements (ibid., p. 250). The voluntary uptake of XBRL by companies is lagging behind and initiatives to implement XBRL hardly exist (ibid., p. 243). Therefore, initiatives to promote the use of XBRL are needed (ibid., p. 250).

Concluding, the results show that in Europe XBRL has failed to become a standard so far and that regulatory intervention is crucial for broad XBRL diffusion so far.

A new aspect observed by **Debreceny et al.** (2011) is that some companies extend their XBRL filings with further information. This can have positive and negative effects for varying stakeholder groups. **Debreceny et al.** (2011) conducted a detailed analysis of the extent of extensions in the population of filings. The analysis shows that there are often unnecessary extensions in the subset. In order to make it possible for consumers of the information to access the tagged data in the disclosures cost-effectively and immediately it is important to keep quality and reliability of the foundation taxonomy high and that only the most appropriate elements in the taxonomy are chosen. If additional extensions are made it is necessary to keep them easily understandable and provide a good documentation, otherwise costs for the consumers rise again (ibid., p. 635-655). **Rao, Guo and Hou** (2013) wanted to find out, whether and why firms extend standard XBRL taxonomies and disclose voluntarily additional information. They investigated the extent to which chinese firms voluntarily extend the standard XBRL taxonomy to disclose more detailed financial information and identified corporate governance factors that may be associated with voluntary taxonomy extensions in XBRL based reporting. Their results indicate a high level of voluntary taxonomy extension in Chinese firms' XBRL reports. The extent of such extension is associated with the percentage of independent directors, combined CEO/chair of the board position, and firm size. It is also associated with audit firm size. Companies audited by the "Big Four" companies tend to have lower level of taxonomy extension (ibid., p. 133).

According to Kovarova-Simecek and Pellegrini (2016, p. 242) also the so called linked data approach is a new methodology to extend the expressivity of XBRL by enriching it with other standardized data sources and vocabularies. They argue that the linked data approach is a profound technological leap in the customization of financial reports according to the differing needs of various stakeholders. If XBRL data can easily be combined with open datasets via linked data technology, this can provide the foundations for a global data ecosystem of interlinked and interoperable financial and business information with the potential to leverage XBRL beyond its current regulatory and disclosure role. Still the use of XBRL in combination with open data remains at an early state of realisation (O'Riain, Curry & Harth, 2012, p. 142).

There are also some critical voices on XBRL. **Dhole et al.** (2015) investigated the effects of the SEC's XBRL mandate on financial reporting comparability. Through the analysis the authors identified surprisingly a decline in comparability of financial statements after the implementation of the XBRL mandate in the United States. The comparability of financial statements is especially lower if companies use a lot of additional extension taxonomies in their XBRL filing. According to the investigation the comparability is also lower in the case of financial statement items that affect a bigger accounting discretion (ibid., p. 43). **Shan and Troshani** (2016) evaluated the impact of the International Financial Reporting Standards (IFRS) and XBRL on audit fees based on evidence from listed companies operating in the emerging economy China. Their results suggest that XBRL has a main negative effect on audit fees which is weaker for larger firms. Additionally, the authors show that IFRS increases audit fees for all companies (ibid., p. 126 f.). **Blankespoor, Miller and White** (2014) investigated the initial evidence on the market impact of the XBRL mandate. The results suggest that the reduction in data aggregation costs for investors obviously has not served its intended purpose of levelling the informational playing field, at least during the initial years after mandatory adoption (ibid., p. 1465). Although the survey did not find evidence of an information asymmetry reduction during the first few years following the mandate, this might change in future, as the technology

becomes more accessible (ibid., p. 1498). **Oades** (2008, p. 161) argues that "XBRL may help to improve the speed with which information users can access company data, but it does not make the information more informative." Evaluating XBRL, these findings need to be taken into consideration since they contrast with the research evidence identifying mainly benefits of the mandatory adoption of XBRL as a standards.

3 Entities Involved in Supporting the Use of XBRL

As the value of XBRL lies in enabling stakeholders to reuse the company's financial data efficiently every player along the reporting supply chain might be interested in supporting the use of XBRL (Garbelotto, 2009, p. 56 f.). Thus, numerous European and international entities decided to engage in different actions aiming at the implementation or promotion of this standard. These include regulatory or professional bodies, entities that chose to become members of XBRL International consortium, entities that chose to form jurisdictions or to join some already existing jurisdictions. These are, on European level, XBRL Belgium, XBRL Denmark, XBRL Finland, XBRL France, XBRL Germany, XBRL Ireland, XBRL Italy, XBRL Luxembourg, XBRL Netherlands, XBRL Spain, XBRL Sweden, XBRL Switzerland and XBRL UK. Beyond European shores well established jurisdictions are XBRL BY (Belarus), XBRL Canada, XBRL China, XBRL India, XBRL Japan, XBRL Korea, XBRL Russia, XBRL South Africa, XBRL UAE (United Arab Emirates) and XBRL US (xbrl.org, 2017). Also organisations that are concerned with the implementation of the language or the creation of software products that enable designing taxonomies or working with information in XBRL format foster the progress of XBRL in Europe and globally.

As already mentioned before, the SEC in the United States was the forerunner in XBRL implementation starting to use XBRL as mandatory reporting standard for electronic records in 2009. European regulating bodies took an observing role for a long time. This changed in 2008 when the European Parliament urged the Commission to present a roadmap for introducing XBRL reporting in the EU in order to reduce the administrative burden for companies and increase capital market transparency. The report from the Commission to the European Parliament and the Council (2012) on a Programme for the Modernisation of European Enterprise and Trade Statistics sums up the following measures taken at European level: supporting the development of IT systems for the collection of statistical data from enterprises, supporting the development of national statistical taxonomies, and the creation of XBRL taxonomies.

The non-profit organisation XBRL Europe was created in June 2008 under the initiative of XBRL International consortium and some European jurisdictions to promote XBRL in Europe. XBRL Europe is an affiliated entity. It is neither a direct member of XBRL International consortium nor a jurisdiction. Its main objective is to promote and support the standardization of electronic financial and business information in Europe through the use of the XBRL standard and in doing so to support European regional XBRL projects, to develop European XBRL taxonomies and contribute to the harmonization of national implementations, to promote and contribute to the development of new and existing European XBRL members and to support all other activities within Europe for the advancement of the XBRL standard (xbrleurope.org, 2017).

Further important entities at European level involved in creating taxonomies and therefore stimulating the uptake of XBRL are (Enachi & Andone, 2015, p.187): IFRS Foundation (IFRS Taxonomy, based on the International Financial Reporting Standards); European Banking Authority (COREP Taxonomy, based on the Common Reporting Framework and FINREP Taxonomy, based on the

Financial Reporting Framework); European Insurance and Occupational Pensions Authority (Solvency II Taxonomy, based on the content of the Solvency II directive concerning the activities of insurance and reinsurance); Global Reporting Initiative (GRI Taxonomy, developed in collaboration with Deloitte and used for sustainability reporting under the G3 and G3.1 Guidelines); Carbon Disclosure Project and Climate Disclosure Standards Board (Climate Change Reporting Taxonomy, based on the CDP System and CDSB's Climate Change Reporting Framework).

As China was in 2004 the first country in the world to formally require XBRL for all public companies' financial reporting (Kernan, 2008), a look beyond European and United States shores is reasonable and shows numerous further entities stimulating the uptake of XBRL, especially in Japan (Bank of Japan; Tokyo Stock Exchange – mandatory filing), China (Ministry of Finance; Shanghai Stock Exchange – voluntary filing) and India (Bombay Stock Exchange – mandatory Filing), but also in Canada, Chile, Argentina, Mexico, South Africa and the United Arab Emirates (O'Kelly, 2010).

4 Ongoing XBRL Projects

According to Enachi & Andone (2015, p. 188) XBRL projects aim at the relation between private or public entities (enterprises, non-profit organizations, credit institutions, currency exchange bureaux etc.) on the one hand and companies registration offices, tax authorities, banks, securities regulators, statistical institutes etc., on the other hand. Currently XBRL is used by more than 100 regulators in more than 60 countries. Also an increasing number of companies implement XBRL to facilitate structured data reporting. A significant number of new projects are under development at present (Nitchman, 2016).

The following tables provide an overview capturing the main ongoing projects. These lists include the most important projects for which public information exists. Many of them are government projects. I analyzed the information published on the websites of XBRL International consortium and IFRS as well as the information posted on websites of various jurisdictions and organizations involved in the development or implementation of projects regarding XBRL.

4.1 XBRL Projects at European Level

Following Enachi & Andone (2015, p. 188 ff.).

Jurisdiction	Main XBRL projects (Organisations sposoring projects)	Area covered	Types of entities covered	Status
XBRL Belgium	Central Balance Sheet Office (National Bank of Belgium)	Annual accounts	Non-financial enterprises, associations and foundations	Implemented and mandatory
	Commission Bancaire Financier Assurance XBRL Project (Financial Services and Markets Authority)	Financial Reporting	Credit institutions	Implemented and mandatory
		Solvency Reporting	Credit institutions, investment firms, settlement institutions	
	Federal Service Finance - Tax Administration (Federal Public Service Finance)	Corporate tax reporting	Companies	Implemented and optional
	National Institute for Statistics (Directorate General Statistics	Annual surveys on the structure	Companies	Implemented and optional

	and Economic Information)	of companies		
XBRL CH – Switzerland	OR Taxonomy (XBRL CH - Switzerland)	Financial reporting in accordance with the Swiss Code of Obligations	Companies	Developed
XBRL Denmark	Danish Commerce and Companies Agency (DCCA) Project (Danish Business Authority)	Annual report prepared in accordance with the Danish Financial Statements Act	All Danish businesses	Implemented and mandatory
XBRL France	France Commission Bancaire XBRL Project (Bank of France, Banking Commission)	COREP and FINREP reports	Financial institutions	Implemented and mandatory
	Infogreffe XBRL Project (XBRL France)	Annual accounts	Companies	Implemented and optional
XBRL Germany	German E-Bilanz (Ministry of Finance)	Tax returns	German Corporations	Implemented and mandatory
	Deutsche Bundesbank Project (Deutsche Bundesbank)	Information on securitisation positions. Contribution to group solvency.	Credit institutions, Financial services institutions	Implemented and mandatory
XBRL Ireland	Central Bank and Financial Services Authority of Ireland XBRL Project	Prudential reporting under COREP and FINREP frameworks	Credit institutions	Implemented and optional
	Companies Registration Office (Ireland) XBRL Project	Financial statements	Companies	Implemented and optional. Mandatory for clients in the large cases division to the Irish Revenue Commission
XBRL Italy	Direct Reporting of Foreign Investments (Bank of Italy)	Information on foreign transactions	Companies	Implemented and optional
	Italian Government XBRL Reporting Requirements (Unioncamere/InfoCamere – Italian Business Register)	Financial statements	Limited liability companies	Implemented and mandatory
XBRL Luxembourg	Commission Surveillance Secteur Financier (CSSF) Project (Financial Sector	Prudential reporting	Entities under the supervision of the CSSF	Implemented and mandatory

	Supervisory Commission)			
XBRL Netherlands	Dutch SBR (in the past, Dutch Taxonomy Project) (Ministry of Finance)	Tax filings	Companies	Implemented and mandatory
		Financial statements		Implemented and optional
	The Dutch Bank XBRL Project	Credit reports	Companies	Implemented and optional
XBRL Spain	Ministry of Economy, National Accounting and Auditing Institute	Financial statements	All Spanish corporations	Implemented and mandatory
XBRL Sweden	XBRL Project at The Swedish Companies Registration Office (Bolagsverket)	Annual accounts and auditor's report	Small and Medium-sized Entities under the Swedish GAAP	Implemented and voluntary
XBRL UK	XBRL United Kingdom Corporation Tax Online (Her Majesty's Revenue & Customs)	Tax filings	All UK corporations	Implemented and mandatory
	Companies House Financial Statement Filing	Financial Statements	Limited companies	Implemented and mandatory

Table 1: XBRL projects at European level

Besides the ongoing projects from different XBRL jurisdictions, there are also projects established or in progress in other European countries. In a work presented at the 17th European Commerce Registers' Forum in Rome, Maguet (2014) indicates that there are more than 65 XBRL projects in 19 European countries for national reporting or European reporting, spread over all sectors (banking, insurance, securities market sectors, business registers, tax and other sectors).

A major XBRL project in the banking and financial sector is the COREP-FINREP Project. The Committee of European Banking Supervisors (CEBS) has implemented XBRL for its common reporting framework COREP (Common Reporting) and financial reporting framework (FINREP) for credit institutions and investment firms operating in the European Union. The COREP framework is designed for obtaining the information on capital adequacy based on the Basel II / Basel III Guidelines covering the capital requirements for credit risk, operational risk and market risk. The FINREP framework is established for financial reporting. The COREP and FINREP taxonomies can be easily customized to the requirements of national supervisors. In the insurance sector the European Insurance and Occupational Pensions Authority (EIOPA) promotes the adoption of XBRL with its EIOPA Solvency 2 project for mandatory filing (based on the Solvency II / Omnibus II) guidelines. Moreover, as part of the amended EU Transparency Directive, the European Securities and Markets Authority (ESMA) introduced XBRL as the possible standard for mandatory reporting for all stock listed companies in the European Union as of the 1st of January 2020 (xbrl.org, 2017b).

To sum up it can be said that the implementation of XBRL is on different stages in different European countries. It shall not remain unmentioned that Spain was one of the first countries engaged in XBRL and therefore is a pioneer in XBRL implementation in Europe (Escobar-Rodríguez & Gago-Rodríguez, 2012, p. 93).

4.2 XBRL Projects in the United States

Jurisdiction	Main XBRL projects (Organisations sponsoring projects)	Area covered	Types of entities covered	Status
XBRL United States	Interactive Data Project (SEC)	Financial statements	Listed companies and securities, including mutual funds	Implemented and mandatory
	FFIEC Call Report Modernization (Federal Financial institutions Examination Council)	Reports of Condition and Income (Call Report)	US Banks	Implemented and mandatory

Table 2: XBRL projects in the United States

XBRL has gained momentum globally due to mandatory adoption; regulatory bodies across the world are pushing for XBRL filings. Especially the SEC has played a vital role in accelerating adoption of XBRL in the United States and beyond U.S. shores.

4.3 XBRL Other Projects

Jurisdiction	Main XBRL projects (Organisations sposoring projects)	Area covered	Types of entities covered	Status
XBRL Canada	Canadian Securities Administrators Voluntary XBRL filing program	Financial statements	Reporting issuers (incl. listed companies)	Implemented and voluntary
Chile (not affiliated*)	SVS (Superintendencia de Valores y Seguros) Listed Company Filing	Financial statements	Listed companies	Implemented and mandatory
XBRL China	China Securities Regulatory Commission	Financial statements	Listed companies	Implemented and mandatory
Colombia (not affiliated*)	Colombian Business Registrar (Superintendencia de Sociedades)	Financial statements (balance sheet, profit/loss and cash flow statements)	Colombian businesses	Implemented and mandatory
XBRL India	Bombay Stock Exchange XBRL Project	Financial information	Listed companies	Implemented and mandatory
XBRL Indonesia (not affiliated*)	Bank Indonesia Islamic Banking Regulatory Reporting System (Central Bank of Indonesia)	financial statements	Islamic banks	Implemented and mandatory

* not affiliated meaning not an official Jurisdiction

XBRL Japan	Japan Financial Services Agency Next Generation EDINET	Financial/ Disclosure statements	Japanese listed companies and investment funds	Implemented and mandatory
	Bank of Japan	Balance sheet data	Financial institutions	Implemented and mandatory
	National Tax Agency (NTA) XBRL Project	Tax returns	Japanese Corporations	Implemented and mandatory
	Tokyo Stock Exchange XBRL Project	Financial information	Listed companies	Implemented and mandatory
XBRL UAE	ESCA Securities Filings (Emirates Securities and Commodities Authority)	Financial statements	Listed companies and brokers	Implemented and mandatory
Mexico (not affiliated*)	Mexican Securities Regulation (Bolsa Mexican de Velores, National Banking and Securities Commission)	Financial statements	Mexican listed companies	Implemented and mandatory
Panamá (not affiliated*)	Panamá Banking Supervision	Financial statements	Peruvian banks	Implemented and mandatory
Peru (not affiliated*)	Peru Superintendency of Securities (Superintendencia del Mercado de Valores)	Financial statements	Listed companies	Implemented and mandatory
Brazil (not affiliated*)	Project SICONFI (Brazil National Treasury)	Financial and budgetary statements	Brazilian government entities	Implemented and mandatory

Table 3: Further XBRL projects

As can be seen in this table, XBRL adoption is in progress also beyond Europe and the United States. In Asia, as in the U.S., XBRL is being used at the capital market. Stock exchanges in Japan and South Korea mandate XBRL data and China became in 2004 the first country to formally adopt XBRL for financial reporting. In Latin and South America XBRL adoption is primarily driven by banking supervisors. Also the Middle East adoption potential is high, especially in the United Arab Emirates (O'Kelly, 2010).

5 The Analysis of Financial Reporting Policy Framework and the Progress of XBRL

5.1 Methodology of the Research

To answer the research questions I conducted a detailed literature review in the first part of the paper and described the entities involved in supporting the use of XBRL as well as the most important XBRL projects in Europe, the United States, Asia, Latin and South America and the Middle East. To

* not affiliated meaning not an official Jurisdiction

determine in which stage of the policy cycle (according to Windhoff-Héritier, 1987) the member states of the European Union and the United States are at present, I conducted a policy analysis. Again, I used the information published on the websites of XBRL International consortium and IFRS and that posted on websites of various jurisdictions and organizations involved in the development or implementation of projects regarding XBRL as well as legislative texts.

The interest of a policy analysis is according to Windhoff-Héritier (1987) to show how policy makers deal with problems in a certain policy field. The problem to be discussed is the international standardization of reporting standards and the implementation of XBRL. Windhoff-Héritier uses the concept of the policy cycle to analyse various phases, settings, and actors in the development and implementation of policies. The policy cycle consists of different stages: a) problem definition, b) agenda-setting, c) policy development d) policy implementation, e) policy evaluation, f) policy termination or change (ibid., p. 65). The different stages of the policy cycle may overlap. Within this research paper I describe the actors (policy network) as well as the phases, different countries are in at present. As the adoption of XBRL in Europe is characterised by heterogeneity I constructed three clusters to show weather the use of XBRL is mandatory, voluntary or not implemented yet.

5.2 Research Findings

The policy networks engaged in the promotion of XBRL consist mainly of regulatory or professional bodies, the XBRL International consortium, XBRL Europe, and various XBRL Jurisdictions. Although also other organisations along the reporting supply chain foster the progress of XBRL in Europe and the United States their impact on the policy process is low. Regarding the harmonisation of reporting standards on European level the Committee of European Banking Supervisors (CEBS), the European Insurance and Occupational Pensions Authority (EIOPA) and the European Securities and Markets Authority (ESMA) are the most important players in the policy network. In the United States the main actors in the policy network are the SEC and the Federal Deposit Insurance Corporation (FDIC) that introduced XBRL on Call reports, respectively the Federal Financial Institution Examination Council (FFIEC) that developed the taxonomy.

The motivations of the policy advocates towards the voluntary or mandatory adoption of XBRL are its perceived benefits (transparency, accuracy and cost effectiveness of financial statements), organizational readiness (the company is innovative and ready for a new technology), or external pressure. The expectation towards the standard is a competitive advantage in the beginning and to stay competitive in the long term.

XBRL adoption is characterized by pilot projects with voluntary XBRL usage. After a testing phase XBRL often becomes a mandatory standard. To show the progress of XBRL implementation three clusters are constructed. The first cluster sums up countries in which XBRL filing was implemented as a mandatory standard and established in law. This cluster also summarizes countries where XBRL is used mandatory in some areas/sectors as voluntary in others. The countries belonging to this first cluster are Belgium, Croatia, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Estonia, Lithuania, Luxembourg, Netherlands, Poland, Romania, Spain, U.K, and the United States. Countries adopting XBRL voluntarily are Bulgaria, Cyprus, Greece, and Sweden. In this place it is important so mention that primarily the financial industry, especially the banking sector but also stock markets, is adopting XBRL. Also the results of a study conducted by Yingchun & Baohua (2010) show that financial reporting on the internet and the usage of XBRL can be found rather in the financial industry than in other industries. XBRL is not implemented yet in Austria, Czech Republic, Latvia, Portugal, Slovakia and Slovenia.

As XBRL adoption is quite advanced in the United States, this country is in the policy implementation/policy evaluation stage of the policy cycle. The evaluation of XBRL adoption in the United States shows some positive but also some negative impacts. The results of studies conducted by Liu, Wang and Yao (2014) and Liu and O'Farrell (2013) show a positive association between XBRL usage and analyst following as well as analyst forecast accuracy. Nevertheless Dhole et al. (2015) identified a decline in comparability of financial statements after the implementation of the XBRL mandate in the United States. A study by Blankespoor, Miller and White (2014) suggests that there was no information asymmetry reduction during the first few years following the mandate (ibid., p. 1498). Also the FDIC recognized performance issues when it comes to evaluating XBRL reporting on Call reports (set of quarterly financial data). XBRL processing was slower than using SQL code (FDIC, 2006, p. 16). Belgium, Croatia, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Estonia, Lithuania, Luxembourg, Netherlands, Poland, Romania, Spain, and U.K. are in the policy implementation stage. Evaluation has not taken place in these countries yet or is at a very low level. Also in Bulgaria, Cyprus, Greece, and Sweden XBRL is in the implementation stage despite of the fact that the use of XBRL is voluntarily in these countries. The standard has not been determined legally so far but is being tested in different projects. In Austria, Czech Republic, Latvia, Portugal, Slovakia, and Slovenia XBRL is not in use at all. Since the European Union is fostering the progress of XBRL it is likely that also in these countries XBRL will play a major role soon and that its implementation will take place in the near future (Kretchmer, 2013, 169).

The policy analysis shows that the main difference of the policies applied is its mandatory or voluntary usage. Despite these criteria also the sector XBRL is applied in – and therefore the entities covered – varies. It can be distinguished between the tax sector (mandatory XBRL reporting in the Netherlands, Ireland, Germany, Belgium, U.K.,) the statistics sector (mandatory filing in Belgium, Germany, Italy and voluntary in Denmark, Luxembourg & Netherlands), the banking sector (COREP and FINREP projects), the insurance sector (Solvency II projects), and the securities market sector (mandatory XBRL filing to the SEC) and other sectors such as municipalities, ministries, business registers etc. Further, the XBRL taxonomies and the permission of extensions vary widely.

Analysing the organizational, economic and social impacts of XBRL adoption the results of the policy analysis suggest that the main XBRL adoption drivers are capital market transparency (US SEC Mandate, European Commission, China Securities Regulatory Commission), the strengthening of financial supervision as well as economic drivers such as reducing administrative burden. Also the need for market regulation is an adoption driver. The last financial crisis, which was triggered by US subprime mortgages, has spread over the world due to the increasingly integrated nature of markets, thus, showing a need for the regulation of financial markets. Furthermore, also IFRS is an adoption driver as many countries bind the adoption of the IFRSs to the implementation of XBRL.

6 Discussion and Conclusion

The findings of this paper show that the adoption of XBRL is characterised by heterogeneity. In some countries, such as the United States, Japan, Spain, and the UK XBRL has become an established standard. In contrast, especially in smaller European countries such as Austria XBRL adoption is lagging behind. Further, the results of the policy analysis suggest that primarily the financial industry is adopting the new reporting standard. Regarding the motivations towards the voluntary or mandatory uptake of XBRL three dominating factors can be distinguished: a) the perceived benefits (transparency, accuracy and cost effectiveness of financial statements), b) the organizational readiness

(innovative companies), or c) external pressure. If XBRL is once implemented it meets the expectations of their advocates. As Estonia sums up the effects of XBRL implementation in their e-Annual Reports: “XBRL enables quick and easy processing of business data and helps to create transparent, efficient, convenient and trustworthy relations between citizens, government agencies, and other stakeholder groups” (Gault, 2013).

XBRL policies in different countries can be distinguished by its mandatory or voluntary character. Often XBRL adoption starts on a voluntary basis within the context of a project, and becomes mandatory later on. Taking into account the organizational, economic and social impacts of XBRL adoption this policy analysis suggests that the main XBRL adoption drivers are capital market transparency, the strengthening of financial supervision, the need for market regulation, and the reducing of administrative burden. According to Premuroso and Bhattacharya (2008), Ragothaman (2012) and Kaya (2014) organizational impacts on XBRL adoption are a company’s size, its liquidity, and its level of innovativeness (larger, liquid firms with a high level of innovativeness are more likely to adopt XBRL).

As the European Securities and Markets Authority (ESMA) introduced XBRL as the possible standard for mandatory reporting for all stock listed companies in the European Union as of the 1st of January 2020, it seems as if XBRL adoption which is in a rather early stage of development in the most European countries today will become ever more important in the next years.

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