

Euro Inflation Linked Bonds

Recent market developments



The French Bond Association
Comité de Normalisation Obligataire

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17th June 2014

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Key words and summary

- Inflation linked bond, Global overview, ILB, breakeven, Eurozone HICP ex-tobacco, asset swap, market standardization, Debt profile lengthening, Investor base diversification, Funding instrument diversification, OATei, BTPei, DBRei, SPGBei

With the very recent outstanding success of the French OAT€i 0.70% 25-07-2030 EUR3.5bn and the inaugural Spain 1.80% 30 November 2024 linked to Eurozone HICP ex-tobacco, the global Inflation linked bond (ILB) market has enjoyed a dramatic development over the last 5 years and doubled up its outstanding. These recent transactions have initiated a strong focus on the Eurozone region. ILB market is also driven by the Asian region. This globalization has been characterized by a standardization across regions. Since the beginning, FBA/CNO has been very active in ILB market and published several papers about it. This paper offers a global market update on the ILB market.

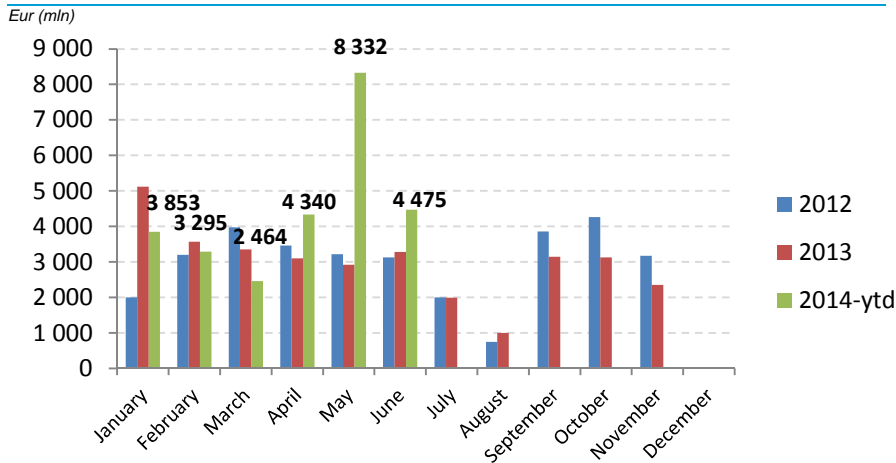
Les récentes transactions ont particulièrement porté l'attention sur la région Eurozone compte tenu de leur succès : Emission française OAT€I 0.70% 25-07-2030 de 3.5 milliards d'euros et émission inaugurale de l'Espagne 1.80% 30 novembre 2024 de 3.5 milliards d'euros, les deux émissions étant indexées à l'inflation en Eurozone (hors Tabac). Mais le marché des obligations liées à l'inflation est aussi tiré par la région Asie. Cette mondialisation a été caractérisée par une standardisation du marché à travers toutes les régions. Le CNO/FBA s'est montré très actif sur ce marché a publié à plusieurs reprises sur le sujet. Ce document fournit une mise à jour du marché des obligations inflations.

Overview

- The global Inflation linked bond (ILB) market has enjoyed a dramatic development over the last 5 years and doubled up its outstanding. The highly successful Inaugural Spain 1.80% 30 November 2024 linked to the Eurozone HICP ex-tobacco (EUR5bn), the outstanding success of the BTP Italia - retail targeted - linked to the Italian CPI (EUR20.5bn) and the very well received new syndicated OATei 0.70% 25-07-2030 (EUR3.5bn) have initiated a strong focus on the Eurozone region and its ILB market.
- The CNO/FBA has been very active on this market since the beginning and published several papers on this topics :
 - <http://www.cnofrance.org/fr/les-obligations-indexees-sur-linflation-.10.cfm>
 - <http://www.cnofrance.org/gb/inflation-linked-bonds.47.cfm>
- Since 2000, the Inflation Linked Bond (ILB) market's globalization has been driven by two regions : Europe and Asia. The globalization process has been characterized by a market standardization across regions. However the Eurozone ILB market stands out from other ILB markets as it combines several sovereign issuers with different credit, issuing in the same currency and usually in same CPI index (Eurozone HICP ex-tobacco).
- Main drivers to issue ILB bonds are almost similar among issuers: **Debt profile lengthening, Investor base diversification and Funding instrument diversification.** This note highlights how different sovereign ILB issuers position themselves on this market.

2014 : A solid market response to Eurozone ILB supply

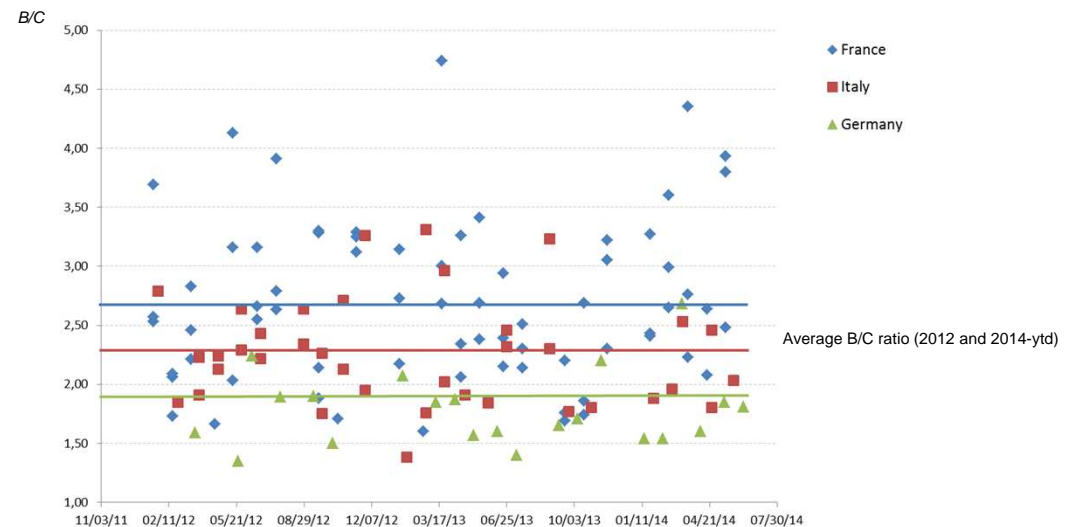
Monthly ILB Supply - Euro denominated - excluding BTP Italia (retail)



- Overall despite low inflation environment and low real yield, investor appetite for euro-denominated inflation linked bond keeps growing
- Excluding BTPItalia (retail targeted) the 2014 ILB supply is still 25% higher than the 2013 supply over the same period of time
- Including BTP Italia, total ILB supply was EUR60.1bn in 2012, EUR72.3bn in 2013 and is up to EUR51.8bn in June (2014 ytd). If this half year trend stays at this level, 2014 total volume figures may reach an **historical high level**.

- Healthy B/C ratio for France
- Country by country B/C ratio could differ depending on prevailing domestic demand and on the diversification of benchmarks

B/C ratio - Sovereign ILB Supply - Euro denominated - excluding BTP Italia (retail)



World Wide Linkers: 100% outstanding increase in 5 years

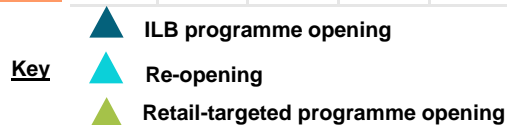
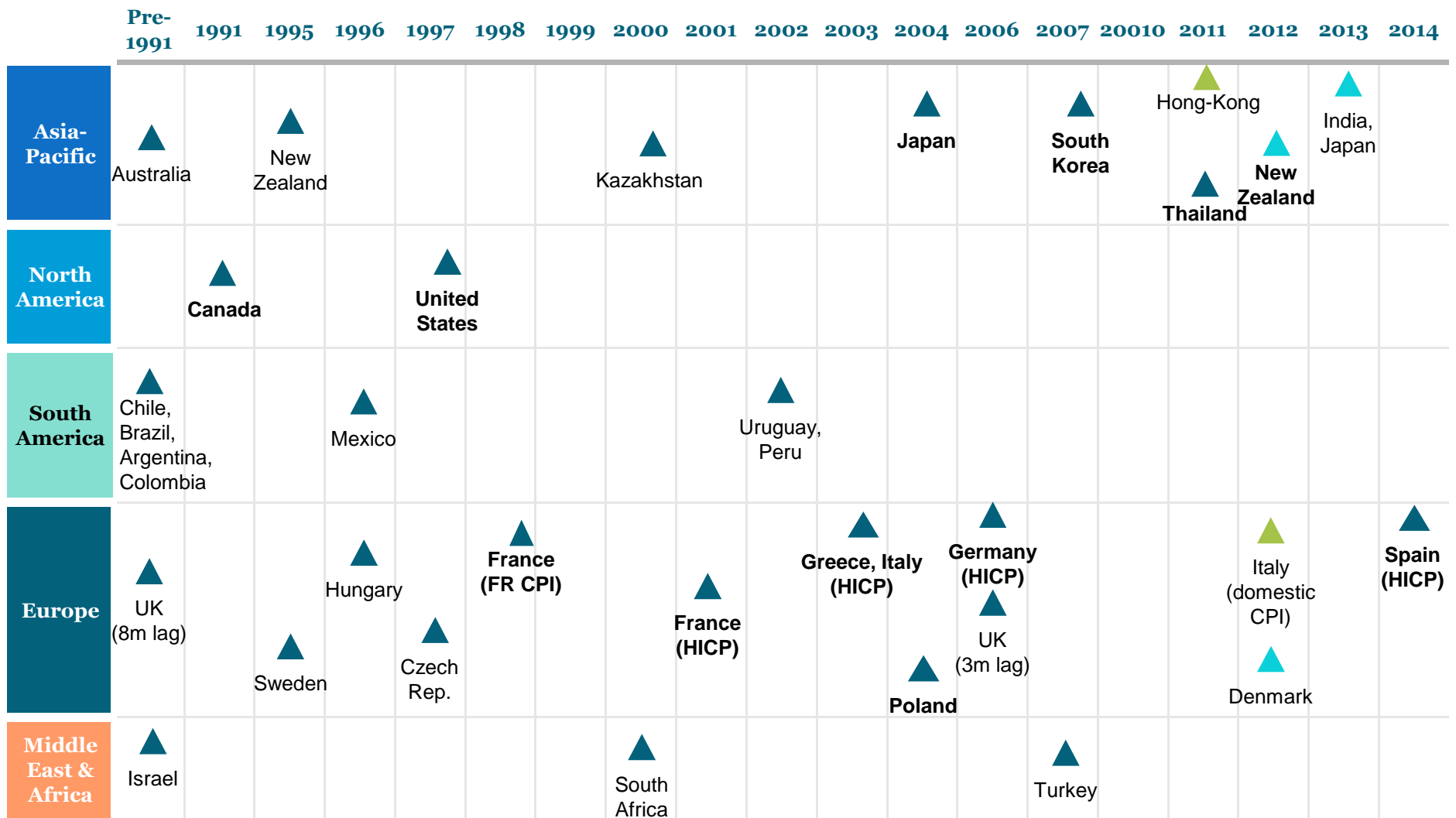
Eq. \$ 2.85trn of Government Inflation-Linked debt



Source: HSBC & Bloomberg as of 20/05/2014

- ILB market outstanding twice as big as the Covered Bond Market
- Eurozone ILB market represents c. \$650bn i.e. more than 20% of the global ILB market
- The 4 largest countries within the Eurozone are now issuing linkers

The inflation-linked bond market: normalization trend



Market standardization within the Eurozone

Country	France Domestic French CPI	France Eurozone inflation	Italy Eurozone inflation	Germany Eurozone inflation	Spain Eurozone inflation
Market term	BTANi / OATi	OATei	BTPei	DBRei / OBLei	SPGBei
Year initiated	1998	2001	2003	2006	2014
Number of outstanding issues*	6	9	10	5	1
Outstanding size*	EUR 74bn	EUR 112.7bn	EUR 138.3bn	EUR 66.4bn	EUR 5bn
As fraction of the Government debt*	4%	5%	6%	4%	1%
Tenors*	Up to 15 years	Up to 30 years	Up to 30 years	Up to 15 years	10 years
Redemption month	July	July	September	April	November
Reference CPI	French CPI ex- tobacco	Eurozone HICP ex-tobacco	Eurozone HICP ex-tobacco	Eurozone HICP ex-tobacco	Eurozone HICP ex-tobacco
CPI ticker	FRCPXTOB Index	CPTFEMU Index	CPTFEMU Index	CPTFEMU Index	CPTFEMU Index
Lag period (months)	Three	Three	Three	Three	Three
Deflation floors	Yes	Yes	Yes	Yes	Yes
Coupon payment	Annual	Annual	Semi-Annual	Annual	Annual
Denomination	EUR 1.0	EUR 1.0	EUR 0.01	EUR 0.01	EUR1000
Day count convention	ACT/ACT	ACT/ACT	ACT/ACT	ACT/ACT	ACT/ACT

Source : Bloomberg and issuers' websites

(*) as of 11-06-2014

Market standardization across regions

Country	United-Kingdom	New Zealand	United-States	Japan	Thailand
Market term	UKTi	NZGB Index linked	TIPS	JGBi	ThaiGB Indexed bonds
Year initiated	1981	1995	1997	2004	2011
Number of outstanding issues*	23	3	38	18	2
Outstanding size*	GBP 333.4bn	NZD 10.4bn	USD 962.4bn	JPY 3.8trn	THB 179bn
As fraction of the Government debt*	24%	14%	8%	0.4%	5%
Tenors*	Up to 54 years	Up to 30 years	Up to 30 years	10 years	Up to 30 years
Redemption month	January, March, April, July, November,	February, September	Jan, Feb, April, July	March, June, September, December	March, July
Reference CPI	RPI	CPI	CPI	CPI	CPI
CPI ticker	UKRPI Index	NZPICPI Index	CPURNSa Index	JNCPI Index	THCPI Index
Lag period (months)	Three (or eight old bench)	Two quarters	Three	Three	Three
Deflation floors	No	No	Yes	Yes (2013)	Yes
Coupon payment	Semi-annual	Quarterly	Semi-annual	Semi-annual	Semi-annual
Denomination	GBP 0.01	NZD 1000	USD 100	JPY100 000	THB 100k
Day count convention	ACT/ACT	ACT/ACT	ACT/ACT	ACT/365	ACT/365

Source : Bloomberg and issuers' websites
 (*) as of 11-06-2014

Specificity of the ILB retail targeted issues

Country	Hong Kong	Italy Domestic CPI
Market term	iBond	BTPi
Year Initiated	2011	2012
Number of outstanding issues*	3	6
Outstanding size*	HKD 21.5bn	EUR 87bn
As fraction of the Government debt*	2%	4%
Tenors*	3 years	Up to 6 years
Redemption month	June, July	April
Reference CPI	Headline CPI	Italy CPI FOI Tobacco
CPI ticker	HKCPI Index	ITCPIUNR Index
Lag period (months)	Average of the previous six months	Average of previous semester
Deflation floors	Yes	Yes
Coupon payment	Semi-annual	Semi-annual
Denomination	Retail targeted	EUR 0.01
Day count convention	ACT/365	ACT/ACT

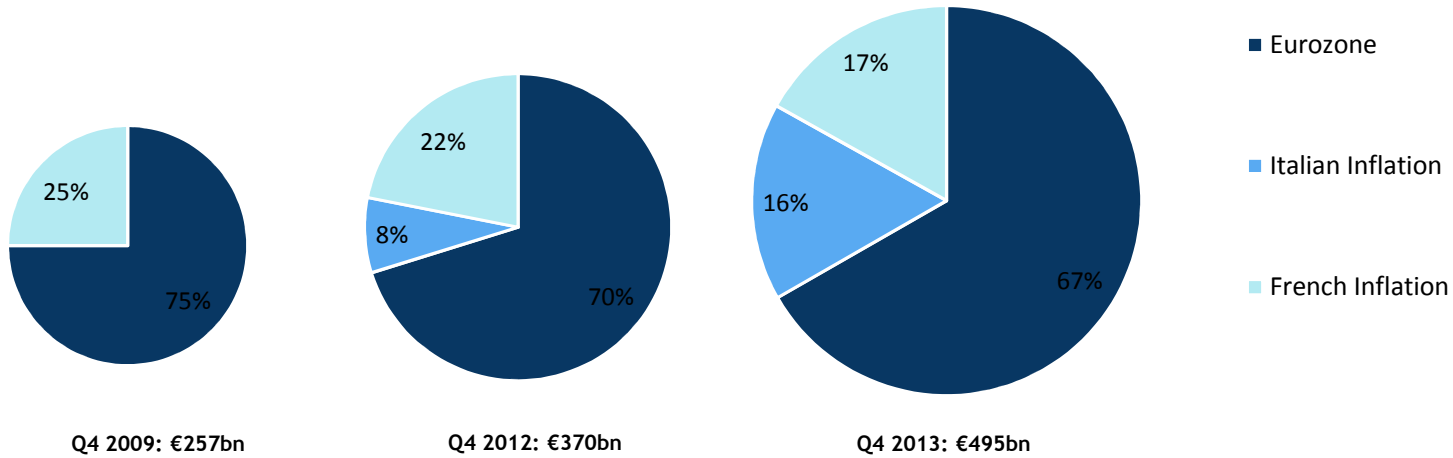
Links :

- <http://www.dt.tesoro.it/en/>
 - <http://www.try.gov.hk/internet/ehome.html>

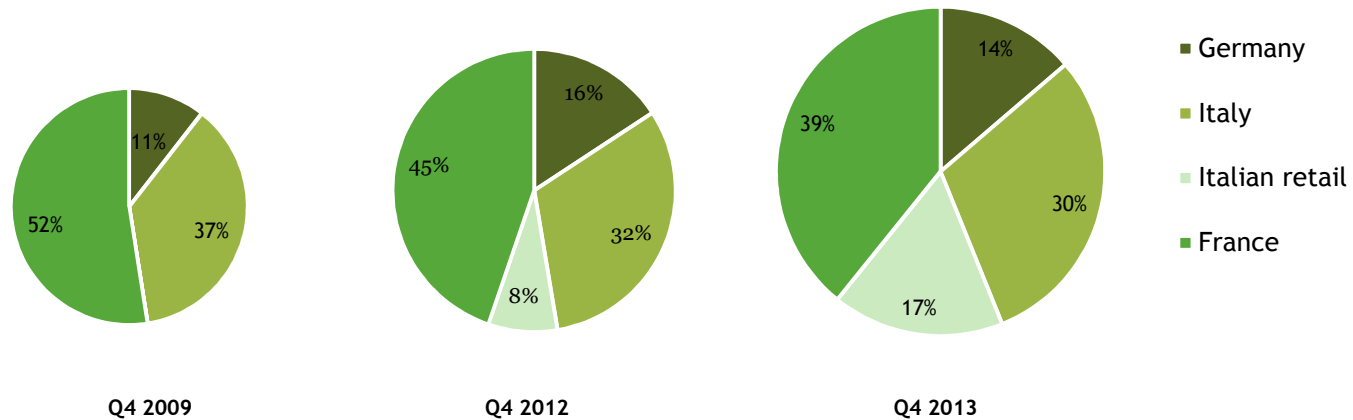
Source : Bloomberg and issuers' websites

(*) as of 11-06-2014

European ILB market unique features

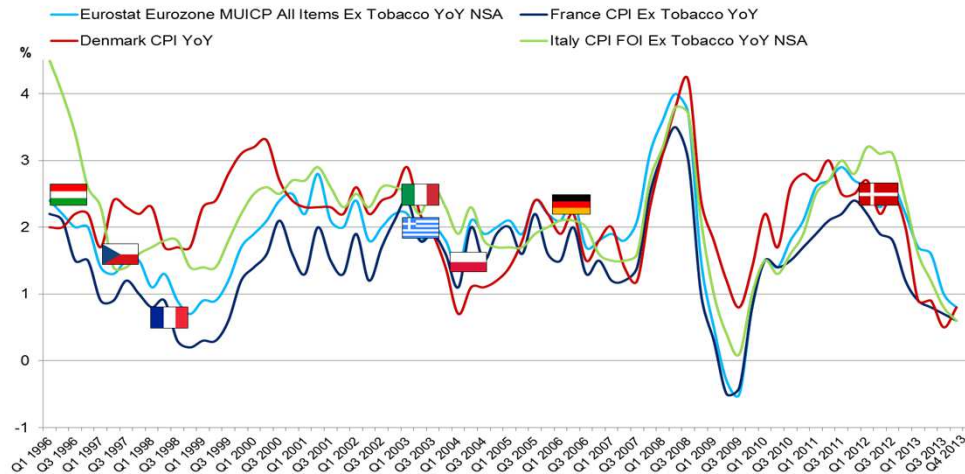


Market breakdown by countries



Source : Bloomberg

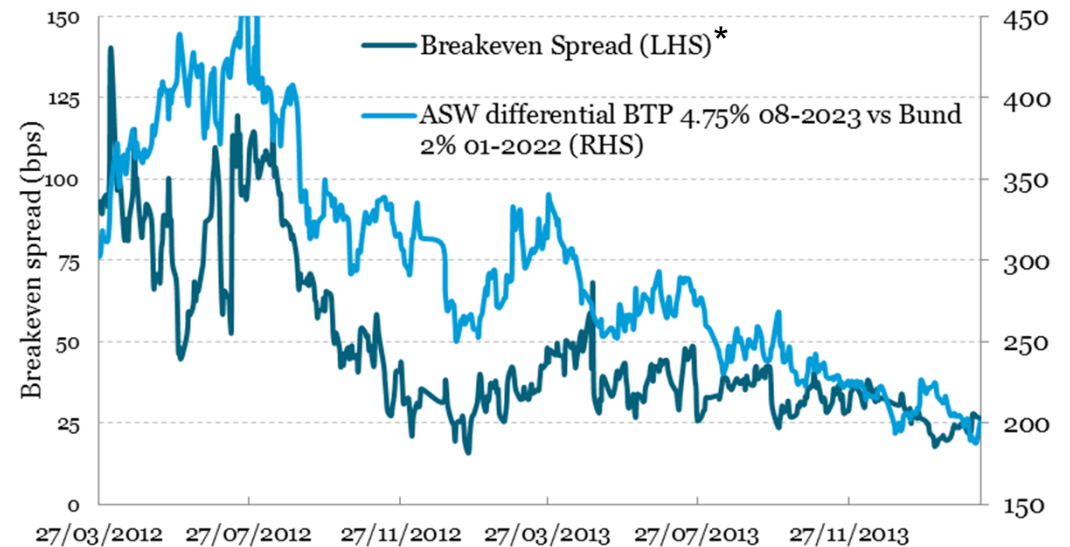
Strong CPI correlation doesn't mean same breakeven



- Within Eurozone, CPI's are highly correlated.
- Even non Eurozone countries like Denmark are showing evidence of this regional correlation (mainly because of the fixed exchange rate between Danish krone and euro)

- BE's wise, differentiation is coming from breakeven inflation rate (BEIR) whose behavior could take into account various market factors such as : liquidity, credit strength, secondary flows, demand in asset swap and actual ILB supply.

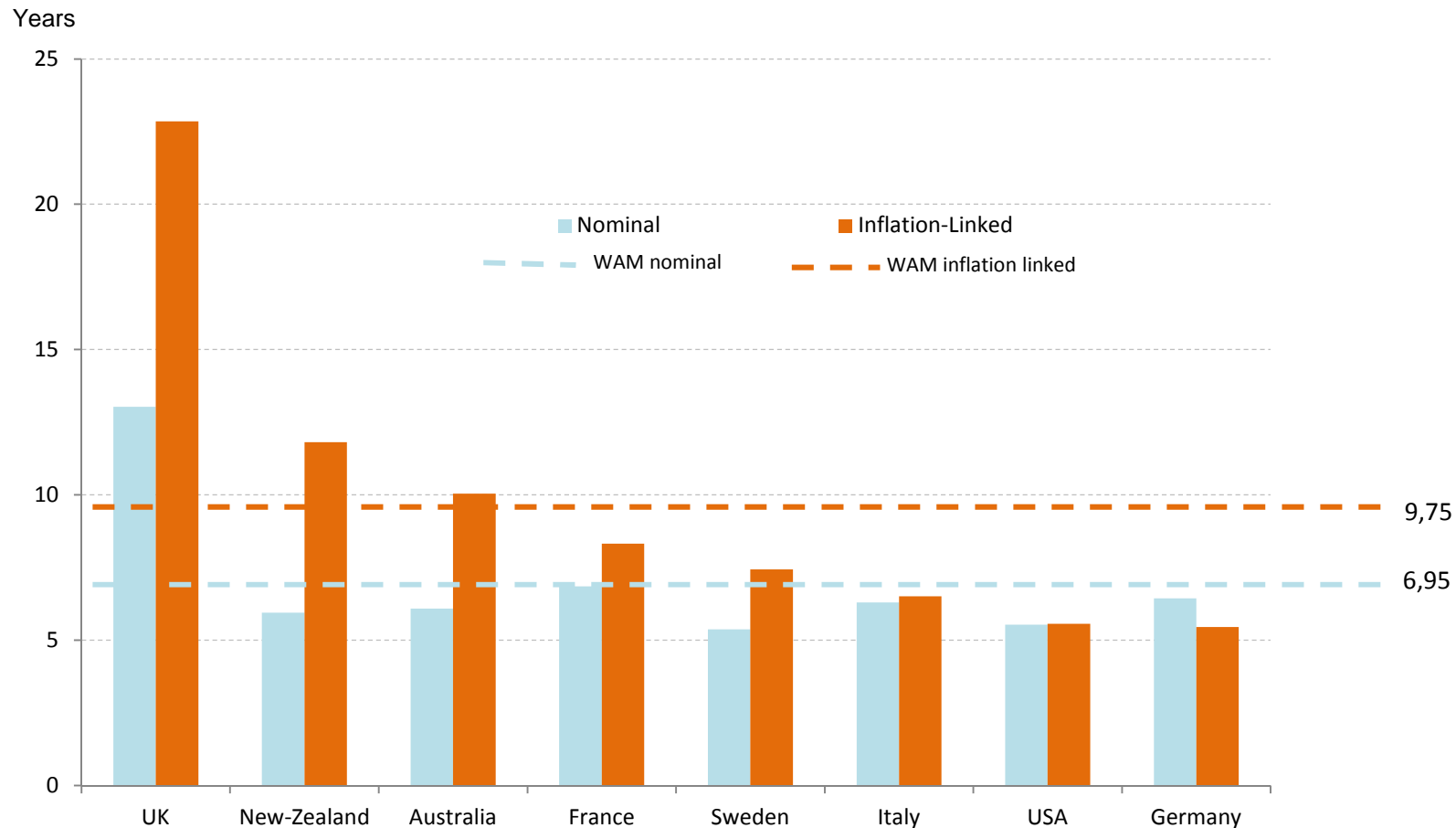
*Breakeven spread = DBRei 0.10% 04-2023 cash breakeven (minus) BTPei 2.60% 09-2023 cash breakeven



Issuers' rationale

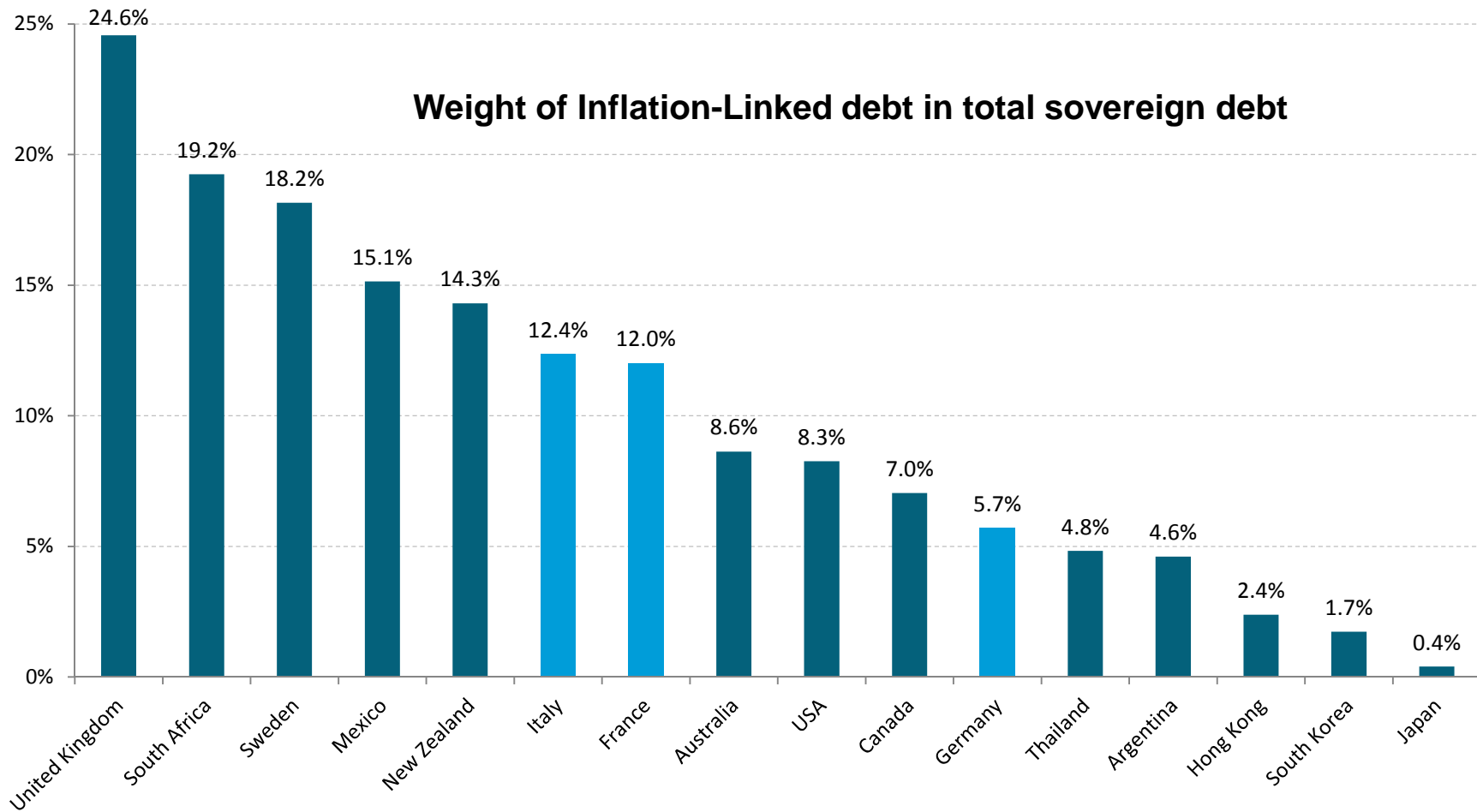
- Drivers to issue ILB bonds similar among issuers:
 - **Debt profile lengthening**
 - **Investor base diversification**
 - **Funding instrument diversification**
 - Infrastructure financing
 - Inflation risk premium saving
- In the following slides we show how Sovereign issuers are positioning themselves according the first 3 drivers.

Debt profile lengthening : ca. 3-year difference between ILB and Nominal Bonds



Weighted average maturity (WAM) of 9,75 years for ILB vs 6,95 years for nominal bonds

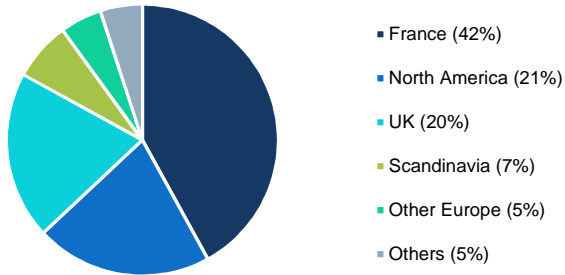
Funding instrument diversification



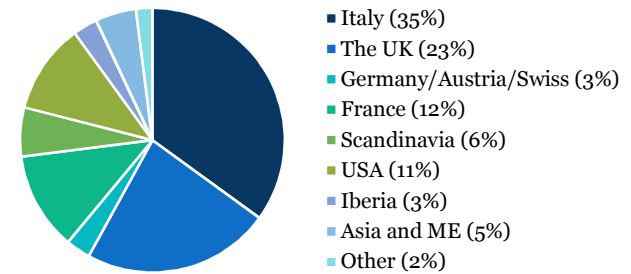
Source: Bloomberg as of 11/06/2014

Investor base diversification (syndicated transactions)

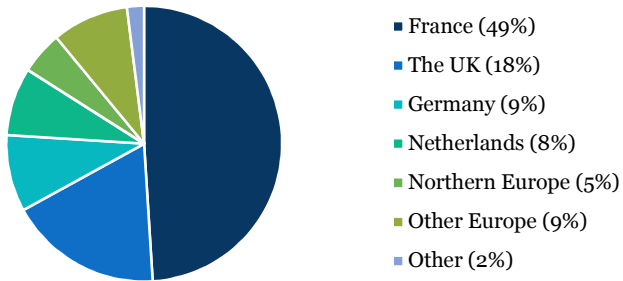
2014 €3.5bn 15yr OATei due Jul-2030



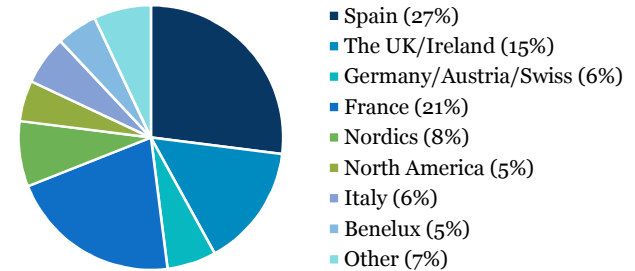
2014 €4.5bn 10yr BTPei due Sep-2024



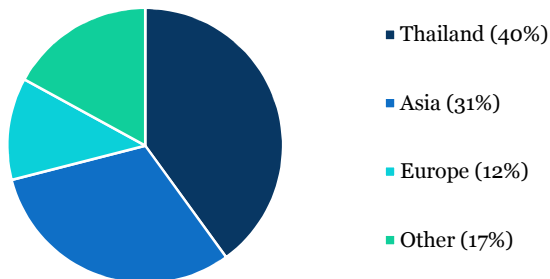
2011 €3.0bn 15yr OATei due Jul-2027



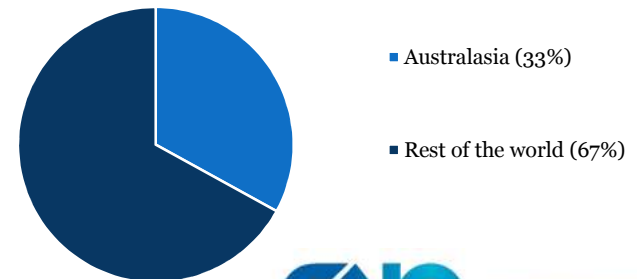
2014 €5.0bn 10yr SPGBei due Nov-2024



2013 Thailand THB40bn 15yr ILB due Mar-2028



2013 NZ\$2.5bn 17yr NZGBi due Sep-2030



Source : Bloomberg, issuers

Useful links

- CNO/FBA
 - <http://www.cnofrance.org>
- Eurozone Sovereign issuers (linkers)
 - France: <http://www.aft.gouv.fr>
 - Germany: <http://www.deutsche-finanzagentur.de/en/startpage>
 - Spain: <http://www.tesoro.es/en/index.asp>
 - Italy: <http://www.dt.tesoro.it/en/>
- Other issuers (linkers)
 - The UK: <http://www.dmo.gov.uk>
 - New-Zealand: <http://www.nzdmo.govt.nz>
 - United States: <http://www.publicdebt.treas.gov>
 - Japan: <http://www.mof.go.jp/english>
 - Thailand: <http://www.pdmo.go.th/en>
 - Argentina: <http://www.mecon.gov.ar/finanzas/sfinan>
 - Canada: <http://www.fin.gc.ca/fin-eng.asp>
 - Australia: <http://www.aofm.gov.au>
 - Sweden: <http://www.government.se/sb/d/2062>
 - Mexico: <http://www.shcp.gob.mx/Paginas/default.aspx>
 - Hong-Kong: <http://www.try.gov.hk/internet/ehhome.html>

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