

Does the current mandate make sense?	
Why does the BoE exist?	
To promote the good of the people of the United Kingdom	
Institute and Faculty of Educations	
21 November 2017 4	
Does the current mandate make sense?	
Mandate is via monetary (price) and financial stability	
The remit recognises the role of price stability in achieving economic stability	
more generally, and in providing the right conditions for sustainable growth in output and employment	
oupat and onposition	
Postured of Accuracy	
21 November 2017 5	
Does the current mandate make sense?	
Price stability via	
inflation targeting of	
CPI @ 2% Economic stability Sustainable	
growth in	
investment Sustainable growth in output and employment	
Institute and Totalby of Actuaries	

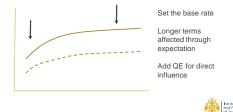
Does the current mandate make sense?	
Does the current mandate make sense?	
Why a single metric?	
• Why 2%?	
Institute and faculty and Actuaries	
21 November 2017 7	
Is a single metric sensible?	
Consumer	
price <i>inflation</i>	
Institute dy of Actuation of the Control o	
21 November 2017 8	
Is a single metric sensible?	
Necessary <i>but not sufficient</i> to achieve sustainable economic growth	
Consumer	
price inflation	
all a	
and final by an and final by an analysis of Actuaries	
21 November 2017 9	

Is a single metric sensib	le?	
is a single illetite selisib		
	Necessary but not sufficient	
	to achieve sustainable	
	economic growth	
Consumer		
price inflation	So what else matters?	-
	all c	
	Institute and faculty of Actuaries	
21 November 2017	10	
Is a single metric sensib	le?	
	GDP is driven by consumers	
Consumer		
price	60%	
inflation		
	Consumers	
	Institute and Faculty of Actuaries	
21 November 2017	of Actuaries	
		-
Is a single metric sensib	le?	
	Necessary but not sufficient	
	economic growth	
Consumer	-	_
price		
inflation	So what else matters	_
	for consumers?	
	Liestinia	
	Patitute Actuaries	
21 November 2017	12	

s a single metric sensib	le?		
	Wage <i>inflation</i> ?		
Consumer	House price inflation?		
price <i>inflation</i>	Rental inflation?		
	Pension inflation?		
		Institute and Faculty of Actuaries	
ovember 2017		13	
hy 2%?			
The sweet spot – not too high, no	ot too low		
s 2% relevant now? Is a moneta	ry supply issue?		-
Ageing populationTechnology			
Behavioural factors – why it's stil	<u>ll</u> 2%		
- Status quo bias, experts' opinion, fe	ear of regret, anchoring	Institute	
ovember 2017		Institute and Faculty of Actuaries	
monetary policy a suit	table tool?		
manage policy a duli			
		Institute and Faculty of Actuaries	
November 2017		15	

The control banker's teelbox		
The central banker's toolbox		
Setting base rates	Macro-prudential regulation	
Fo	7	
	Open market	
Quantitative Easing (QE)	operations	
	Institute and Faculty of Actuaries	
21 November 2017	16	
The central banker's toolbox		
Different tools, same intention		
Monetary policy is about		
the yield curve i.e. the cost of creditthe relative value of risk-free and risky assets		
Lower rates to		
increase aggregate demand through credit exp. push capital into riskier assets		
- push capital into riskler assets	Institute and Faculty of Actuaries	
The central banker's toolbox		
	Set the base rate	
1	Longer terms affected through	
	expectation	
/		
	Pistitute and Faculty of Actuaries	
21 November 2017	of Actuaries	

The cen			



21 November 2017

Is monetary policy a suitable tool to <u>lower</u> inflation?

- Yes
- Effective since 1992
- · Basis for current mandate
- · Can raise rates to arbitrary level

21 November 2017



UK CPI 1989 - 2017



21 November 2017

Is monetary policy a suitable tool to <u>raise</u> infla	tion?	
• A blunt tool		
With costs		
And limitations		
	Institute and Faculty of Actuaries	
21 November 2017	22	
Limitations of monetary policy		
No guarantee cheaper credit is used		
No guarantee it's used for intended purpose		
The lower bound and diminishing returns		
Postpones the issue, doesn't fix it		
	Institute and Faculty of Actuaries	
21 November 2017	23	
A 30-year decline in interest rates		
12% UK government bonds		
10% VA		
250 And War		
2%		
0% 1990 1993 1996 1999 2002 2005 2008 2011 2014 ——17 ——107 ——307		
	Institute and Faculty of Actuaries	

What are the alternatives to monetary policy?		
	Institute and Faculty of Actuaries	
21 November 2017	25	
What are the alternatives to monetary policy?		
Fiscal policy – tax, investment, spending		
Stimulates economy directly		
Not credit-driven -> upfront cost -> politically unpopular		
21 November 2017	Institute and Faculty of Actuaries	
21 November 2017	26	
What did QE bring us?		
	Postitute	
21 November 2017	Postitute and Faculty of Actuaries	

Background – March 2009	
the MPC judged at its March meeting that a further monetary loosening was required. In particular, it was concerned that nominal spending in the economy	
would otherwise be too weak to meet the inflation target in the medium term	
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hard fiscally of Accurrence 2017 28 November 2017	
a recentant duri	
5	
Background – March 2009	
The aim of quantitative easing is to inject money into the economy in order to revive nominal spending	
concentrating	
It should ultimately lead to an increase in asset prices and spending and therefore bring inflation back to target	
Position of Company	
21 November 2017 29	
Mechanism	
Espectations	
Those prices (grad)	
Bask of England International	
Therapy in the economy # Thurst lending	
Persistant of the Control of Actuality of Actuality	
21 November 2017 30	

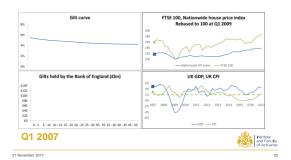
Mechanism		
Wechanism	Asset purchases could have an important impact on expectations	
Expectat	of the same of the	
†Asset pri (Lyselds)	Total wealth	
Bank of England asset purchases	1 Cost of borrowing 1 Spending and Income Income	
f Money in the econor	t flank landing	
	Further and Foodby of Actuaries	
21 November 2017	31	
Mechanism	higher asset prices increase the wealth of asset holders, which should boost their spending	
Expectat	which should boost trieft spending	
Asset on	17 cad wealth	
Bank of England	4 Cost of borrowing 15-pending and softwine at 2% second	
†Money in the econor	thek landing	
	I institute and Faculty	
21 November 2017	of Actuaries	
Mechanism		
	More bank lending to households and companies should help to support higher consumption and investment	
Expecta	Citizes	
†Asset pri (j.yields)	110rd wealth	
Bank of England asset purchases	#Cost of borrowing #Spending and Inflation at 2%	
f Money in the econor	t flank landing	
	institute _	

What does QE look like?

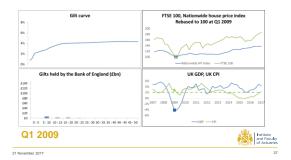
- What's happening to....
 - The gilt curve
 - The amount of bonds purchased
 - Asset prices
 - GDP
 - Inflation

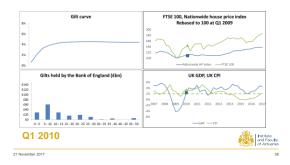


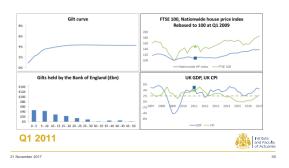
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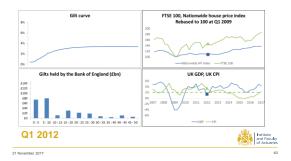


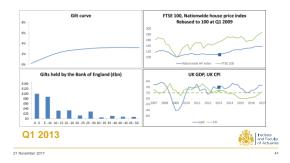
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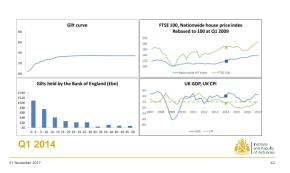


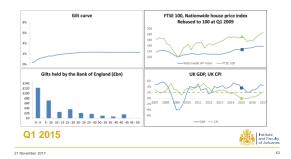


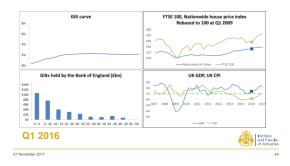


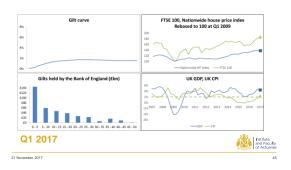










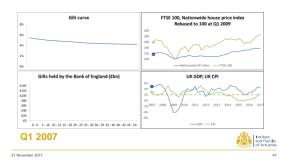


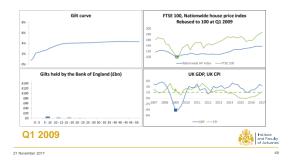
Q1 2009 - Q1 2017

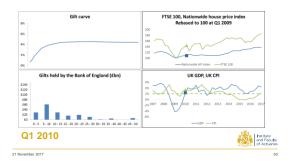
30-year spot rate	4.2% -> 1.7%
FTSE 100	+ 87%
Nationwide Housing Index	+ 38%
Real GDP	3.5%
Average CPI	2.2%

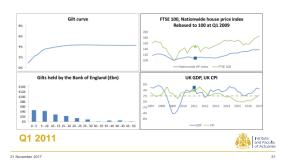


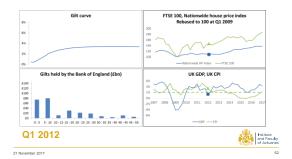
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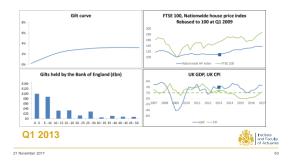


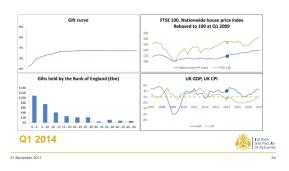


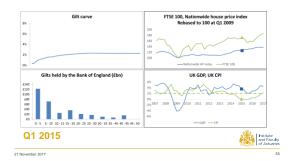


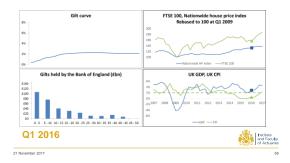


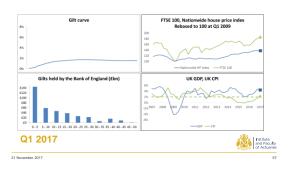












QE did what it promised	
It should ultimately lead to an increase in asset	
prices and spending and therefore bring inflation back to target	
bestitute and Faculty of Actuaries	
21 November 2017 58	
QE did what it promised	
It should ultimately lead to an increase in asset	
prices and spending and therefore bring inflation back to target	
But what else did it bring us?	-
bestude and faculty of Actuaries	
21 November 2017 59	
What else did QE bring us?	
What else did QE bring us?	
What else did QE bring us? • Debt	
• Debt	

What else did QE bring us Average UK debt at £8,000 per pe (not including the mortgage)		
Survey reveals 6m Britons fear never being debt-free with 25% streeds meet and 62% worsied about personal debt levels	uggling to make	
ends meet and 62% worried about personal debt levels	basic living costs, warns City watchdog	
IMF warns that using consumer fuel growth risks crisis	PCA boss raises alarm over growing debt bunden of young people in UK as number of insolvent UB- to 34-year-olds in the UK jumps by a third r debt to	
International organisation joins Bank of England in voicing con- levels of household borrowing	cern over high	
levels of household borrowing 21 November 2017	eern over riigh Putitute and Foculty of Actuaries 61	
What else did QE bring us	5?	
• Debt		
• <u>Dependency</u>		
	Institute used Faculty of Actuaries	
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What else did QE bring us	5?	
• Debt		
Dependency		
Market distortion		
	Institute and Faculty of Actuaries	
21 November 2017	of Actuaries	
		-

The (extreme) search for yield	
 In 2016 Austria sold 2bn Euros of 70-year debt at 1.5% 	
Consider the risks: Long term, very high duration	
- Will the Euro exist in 70 years' time?	
For context, for SII, EIOPA deem the last liquid point for the Euro to be 20	
years	
Postures Institute I	
21 November 2017	
The (extreme) search for yield	
 In 2016 Austria sold 2bn Euros of 70-year debt at 1.5% 	
• In 2017 Austria sold 3.5bn Euros of 100-year debt at 2.1%	
Consider the risks:	
Long term, very high durationWill the Euro exist in 70 years' time?	
- Will the Euro Cost in 70 years unite:	
 For context, for SII, EIOPA deem the last liquid point for the Euro to be 20 years 	
Institute and Faculty of Actuaries	
21 November 2017 65	
Yet the market is (implied) calm	
VFTSE Similar confidence,	
90% outlook, sentiment 80% now vs. 2005?	
70% 60% 50%	
50% 40% 30%	
20% 10%	
the the top	
Institute and Exactly of Actuaries	
21 November 2017 66	
	-

What else did QE bring us?		-
• Debt		
Dependency		
Market distortion		
Pension deficits		
	Institute and Faculty of Actuaries	
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What else did QE bring us?		
• Debt		
Dependency Market distortion		
Pension deficits		
A new predicament		-
		-
	all a	
	Institute and Faculty of Actuaries	-
21 November 2017	68	
What else did QE bring us?		
• Debt		
Dept Dependency		
Market distortion		
Pension deficits		
A new predicament		
 Central bank cannot walk away 		
 Nor can it stay there forever 		
Nor can it stay there foreverHow does it extract itself?	Liestings	
	Institute and Faculty of Accurries	

How will QI	E unwind?		
		Institute and Faculty of Actuaries	
21 November 2017		70	
Q1 2017			
	Gilt curve		
	6% - 4% -		
	25 - 0%		
	Gilts held by the Bank of England (£bn)		
	50 -		
	0 0-5 5-10 10-15 15-20 20-25 25-30 30-35 35-40 40-45 45-50	Institute and Faculty of Actuaries	
21 November 2017		71	
The options	s		
	duce balance sheet		
	ture, with no repurchase such that maturity and/or notional reduce over time		
	initely i.e. no unwind		
		Institute and Faculty of Actuaries	
21 November 2017		72	

The options		
Sell bonds, reduce balance sheet		
Let bonds mature, with no repurchase		
Repurchase such that maturity and/or notional reduce over time		
Rollover indefinitely i.e. no unwind		
• +when should rates rise?		
	Institute and Faculty of Actuaries	
21 November 2017	73	
Balance of gilts if QE left to run off (£bn)		
400		
350		
250 200		
150		
0 - 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
2020 2020 2020 2020 2020 2020 2020 202		
	Institute and Faculty of Actuaries	
21 November 2017	74	
What the Bank of England has said		
• Q1 2009		
The MDC will decide on the most appropriate way to withdraw	the policy	
The MPC will decide on the most appropriate way to withdraw stimulus based on the circumstances prevailing at the ti	ime	
	A 37 A	
	Institute and Faculty of Actuaries	
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What the Bank of England has said	
• Q1 2014	
Q1 2017	
We're not going to sell £375 billion of gilts. That's a hypothetical question, purely hypothetical	
That's a hypothetical question, purely hypothetical	
Mark Carney to the Treasury Select Committee	
Institute and footby of Actuaries	-
21 November 2017 76	
What the Bank of England has said	
• Q2 2014	
The MPC's preference is to use Bank Rate as the active marginal instrument for monetary policy	
alic .	
statifule and Fourby of Actuaries	
21 November 2017 77	-
What the Bank of England has said	
• Q4 2015	
T. 1400	
The MPC expects to maintain the stock of purchased assets at £375 billion until Bank Rate has reached a level from which it can be cut materially	
1 15 0 m	
statistics statistics of Actuaries	
21 November 2017 78	

What the Bank of England has done	
• Q3 2017	
Base rate 0.25% ->0.50%	
The Committee also voted unanimously to maintain the stock of UK government bond purchase	
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alle	
Institute ord Flooring Particute ord Flooring Ord Floori	
2. Provinced AUT	
Monetary policy and pensions	
Perinals by of Accounts	
21 November 2017 80	
What does the Bank of England think about pensions?	
Posture and Focus of Recurse of	
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What does the Donk of England this	uli abaut nanalana0	
What does the Bank of England thin		
	Andy Halldane	
	Bank of England chief economist	
	Next governor?	
	Institute and Faculty of Actuaries	-
21 November 2017	82	
What does the Bank of England thin	nk about pensions?	
• May 2016		
,		
I confess to not being able to make the re	motost conso of nansions	
r coniess to not being able to make the rei	notest sense of pensions	
	Institute	
21 November 2017	Institute and Faculty of Actuaries	
What does the Bank of England thin	nk about pensions?	
August 2016, on the best option for retirement		
It ought to be pensions but it's almost	st certainly property	
	. بر	
	institute and Faculty of Actuaries	
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 Assets matter 				
· Liabilities don't?				
				
		zilie		
		Institute and Faculty of Actuaries	-	
ovember 2017		85		
hat does the Ba	nk of England think	cabout pensions?		
	og	Tubout ponoiono		
blication	Word count on asset	Word count on liability		
antitative easing				
arterly Bulletin Q2 2009				
e United Kingdom's antitative easing policy:				
ign, operation and impact				
arterly Bulletin Q3 2011				
		Institute and Faculty of Actuaries		
ovember 2017		or Actuanes		
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/hat does the Ba	nk of England think	c about pensions?		
blication	Word count on asset	C about pensions? Word count on <i>liability</i>		
olication antitative easing				
blication antitative easing arterly Bulletin Q2 2009	Word count on asset			
antitative easing arterly Bulletin Q2 2009 e United Kingdom's antitative easing policy:	Word count on asset			
blication antitative easing arterly Bulletin Q2 2009 be United Kingdom's antitative easing policy: sign, operation and impact	Word count on asset			
antitative easing arterly Bulletin Q2 2009 e United Kingdom's antitative easing policy: sign, operation and impact	Word count on asset	Word count on liability		
	Word count on asset			

What does the Bank of England think about pensions?

What does the Bar	nk of England thir	nk about pensions?
Publication	Word count on asset	Word count on liability
Quantitative easing Quarterly Bulletin Q2 2009	173	0
The United Kingdom's quantitative easing policy: design, operation and impact	163	0
Quarterly Bulletin Q3 2011	103	· ·
,		Jack Harrison
		Institute and Focul of Actuari
21 November 2017		1
What does the Bar	nk of England thir	nk about pensions?
Essentially ignored		
Not part of the mandate	te	
		Institute and Facu
21 November 2017		of Actuari
The impact of QE	on nensions	
The impact of QL	on pensions	
		Institute and Facult of Actuarie
21 November 2017		

The impact of QE on pensions		
£200	PPF estimate of aggregate DB	
£100	aggregate DB deficits (£bn)	
-£100		
-£200 -£300		
-6400 -5500		
2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2018 2017		
	Institute and Faculty of Actuaries	
21 November 2017	91	
The impact of QE on pensions		
£200 6%	PPF estimate of	
£100 5%	aggregate DB deficits (£bn)	
-£100	+ 20Y gilt spot	
-E200 -E300	rate	
-E400 1%		
-£500 0% 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2018 2017		
	Institute and Faculty of Actuaries	
21 November 2017	92	
The impact of QE on pensions		
10 mm	E-11:	
C 550	Falling annuity rates Source:	
6196	source: sharingpensions.co.uk	
5847		
6.000 6.000 5.000		

The impact of QE on pensions		
How sustainable and secure are DB schemes?		
Subject of recent government consultation		
	Institute and Faculty of Actuaries	
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The impact of QE on pensions		
How sustainable and secure are DB schemes?		
Subject of recent government consultation		
Broadly affordable Some schemes may struggle		
	Institute and Faculty of Actuaries	
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The impact of QE on pensions		
How sustainable and secure are DB schemes?		
Subject of recent government consultation Provide affectable.		
Broadly affordable Some schemes may struggle		
. Affordable but at what aget?		
Affordable but at what cost?		
	Institute and Faculty of Actuaries	
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The impact of pension costs on Bank of England's aims	
 An implicit assumption that it <u>doesn't</u> impact Bank's primary aims To promote the good of the people of the United Kingdom 	
(via) sustainable growth in output and employment	-
alle.	
Feditate of Scully of Actuators 21 November 2017 97	
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The impact of pension costs on Bank of England's aims	
Inflation ratchet in DB schemes	
The end of secure retirement?	
- The end of secure retirement?	
Diverting business investment and wage growth	
Institute Accusing	
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Is there another way?	
Profitable and Faculty and Faculty of Actualities	
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IS t	nere	another	wav's

Question	Answer
Does the current mandate make sense?	
Is monetary policy a suitable tool?	
What did QE bring us?	
How will QE unwind?	
	Institute and Faculty of Actuaries
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Is there another way?

Does the current mandate make sense?	No – CPI tells you little in isolation And 2% is increasingly arbitrary
Is monetary policy a suitable tool?	
What did QE bring us?	
How will QE unwind?	
	Institute and Facult of Actuarie
21 November 2017	10

Is there another way?

Question	Answer
Does the current mandate make sense?	No – CPI tells you little in isolation And 2% is increasingly arbitrary
Is monetary policy a suitable tool?	To lower inflation, yes To raise inflation, it's a blunt tool
What did QE bring us?	
How will QE unwind?	
	Institute and Faculty of Actuaries
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34

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Is there another way?	Answer
Does the current mandate make sense?	No – CPI tells you little in isolation And 2% is increasingly arbitrary
Is monetary policy a suitable tool?	To lower inflation, yes To raise inflation, it's a blunt tool
What did QE bring us?	Exactly what it promised. And more Debt, dependency, distortion, new risks
How will QE unwind?	
	hstitute and Faculty
21 November 2017	of Actuarie
Is there another way?	
Question	Answer
Does the current mandate make sense?	No – CPI tells you little in isolation And 2% is increasingly arbitrary
Is monetary policy a suitable tool?	To lower inflation, yes To raise inflation, it's a blunt tool
What did QE bring us?	Exactly what it promised. And more
What did QE bring us:	Debt, dependency, distortion, new risks
How will QE unwind?	Rates then QE (maybe)
	Institute and Facul of Actuari
21 November 2017	10
What to assess the state of the	also assiste and t
The issues that central ba	inks need to address
Short-termism	

The issues that central banks need to address		
Short-termism		
Narrow view		
• Narrow view		
	I Institute	
21 November 2017	Institute and Faculty of Actuaries	
The issues that central banks need to address		
Short-termism		
Narrow view		
Design that manetary policy has limitations and costs		
Denial that monetary policy has limitations and costs		
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The issues that central banks need to address		
Short-termism		
Narrow view		
Denial that monetary policy has limitations and costs		
And the strength of a state of a second		
Application of outdated economics	Libertinate	
	Institute and Faculty of Actuaries	
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What needs to be change?		
Genuine oversight and accountability		
	Institute and Faculty of Actuaries	
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What needs to be change?		
Genuine oversight and accountability		
Better alignment of fiscal and monetary policy		
	2Ec	
21 November 2017	Institute and Faculty of Actuaries	
What needs to be change?		
Genuine oversight and accountability		
Better alignment of fiscal and monetary policy		
Wider mandate		
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What needs to be change?	
Genuine oversight and accountability	
Better alignment of fiscal and monetary policy	
• Wider mandate	
Start to unwind QE – intention is key	
Petitude on Focus of Accuracy of Accuracy	
21 November 2017 112	
Long term thinking is vital	
Colin Wilson	
Potitiate dy of Actuative	
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Questions Comments	
The leaves expressed in this jubilisation/preventation() are those of initiat combiners and not necessarily from of the jubilisation/preventation() are topic or initiated in the jubilisation and not necessarily from the views stated, not any planting or representation and society necessarilation of accurate respectable or indication respectable or planting by any person for loss or damage suffered as a correspondence of their placing relaxed upon any view, claim or representation made in this [publication/presentation].	
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