

### What is the natural rate of interest?

Stemming from the Swedish economist Knut Wicksell<sup>1</sup>, the “natural” rate of interest is the market clearing rate at which the demand for loanable funds are equal to their supply. The implication of this is that savings equal investments, and that the general price level is steady<sup>2</sup>. Heroic assumptions are required to claim that these all mean the same thing, but in general we can treat them as equivalents.

The terms “natural” and “neutral” are often used interchangeably, but it is possible to draw a distinction. Garrison (2006, p.58) argues that the former are the underlying “Wicksellian” rates that would emerge to equilibrate borrowing and lending, and the latter are the policy rates imposed by the monetary authority. One problem with this distinction is that even a Taylor Rule is an attempt to estimate a neutral rate. In addition, in the UK the policy-controlled rate is the deposit rate, and the interbank rate has less direct intervention than the US equivalent (where the Fed Funds rate *is* the interbank rate). Therefore we need to pay more attention to the spreads between the Bank rate and the actual money market rate. If the transmission mechanism is weak then the policy decision becomes harder. So we need to make a distinction between policy-controlled rates and the market rate, and be able to contrast *both* to the underlying Wicksellian rate. It is also convention to use the terms interchangeably, and so it makes sense to use “policy-controlled” and “natural/neutral” as the terms for the distinction Garrison attempts to draw. With regard to the latter, underlying, “Wicksellian” concept, I personally favour the term “neutral” because it is more descriptive of the key meaning of the concept. Whereas “natural” implies that it can be found in nature (as opposed to a spontaneous and emergent social order), “neutral” alludes to *how* interest rates affect the wider economy. That said, the convention is to go with “natural”, so we shall do so here.

The natural rate is essentially an equilibrium condition in which the economy is on a stable path. Many economists would define it as the rate of interest at which (i) real GDP is growing at its trend rate, and (ii) inflation is stable<sup>3</sup>. This approach is clearly focused on aggregate demand and the concept of the output gap. However for Austrian’s the importance is not that it is neutral with respect to price changes, but neutral with respect to the balance between consumption and investment. According to Horwitz (2000), “money is neutral if the current monetary policy or regime is not a cause of any

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<sup>1</sup> <http://www.econlib.org/library/Enc/bios/Wicksell.html>

<sup>2</sup> “There is a certain rate of interest on loans which is neutral in respect to commodity prices, and tends neither to raise nor to lower them” Wicksell (1936, p. 102)

<sup>3</sup> Woodford (2000) and Amato (2005) defines the natural rate as that which provides price stability. Garrison (2006) points out that focusing on inflation-employment tradeoffs is a consequence of the PQ side of the quantity equation, and completely glosses over the Austrian focus on how the disaggregation of Q depending on the time structure of production

systematic distortion in those [intertemporal] prices, leading to the potential unsustainability of that structure”. In other words when interest rates are neutral the economy is on an intertemporally sustainable path, and it is deviations from neutrality that cause booms and busts. As Garrison (2006, p.58) says,

“governed by the natural rate, unconsumed current output (real saving) is used for augmenting the economy’s productive capacity in ways that are consistent with people’s willingness to postpone consumption”

The natural rate bridges savings and investments, revealing to the market the rate of time preference held by consumers.

Austrians would also caveat the notion of “equilibrium”, arguing that whilst this might be conceptually useful we should not expect to be able to observe it. The real issue is not what the natural rate is, but how it relates to the market rates we *can* observe. Indeed those who would say that the natural rate is impossible to measure have a point. But there are three main reasons why we should still try.

Firstly, sitting on the sidelines is not an option. Whether the Bank of England helps or hinders macroeconomic stability the simple truth is that it exists, and if it exists then it centrally plans. It is naïve in the extreme to imply that all central plans are equally bad, and that there is no benefit to trying to reduce their harm. Letting market forces determine interest rates is not a policy option, so for as long as that is the case there is value in considering the least worst central plan<sup>4</sup>.

Secondly, the Monetary Policy Committee does not *need* to know what the natural rate is, since members do not vote on their preferred interest rate. They vote on whether or not to raise, lower, or keep unchanged the current rate. In this sense the epistemic burden on committee members is significantly reduced, *especially* when interest rates are historically low. Members do not need to argue that the natural rate is X%, they simply need to make a judgment about whether it is higher than or lower than the current market rate. And when the current bank rate is 0.25% it makes it easier still.

The third reason in favour of attempting to estimate the natural rate is because the Austrian theory of the trade cycle presupposes that economists know what it is. Recollect that ABC is built on the claim that when interest rates are pushed below their “natural” levels (due to monetary expansion), a change in relative prices occurs causing an unsustainable boom. How can Austrians declare that interest rates are “below” the natural rate, without having an idea about what this is? One could argue that this is a matter of hindsight, and that such a conclusion can only be drawn retrospectively, but this implies that bubbles can never be identified in advance. Surely there’s a middle ground between knowing everything and knowing nothing? Recollect that the reason the natural rate is inherently unknowable is because it is the rate that would emerge in a free market, and we do not have a free market. This is akin to saying that we cannot know what the market price of cars would be if there is widespread

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<sup>4</sup> See George Selgin, <http://www.coordinationproblem.org/2010/10/ill-side-with-mises-would-friedmans-logic-lead-us-to-qe2.html?cid=6a00d83451eb0069e20133f5743fab970b#comment-6a00d83451eb0069e20133f5743fab970b>

government intervention in the production and sale of cars. But just because we cannot know what the market price for cars would be, does not mean that we cannot say *anything* about their relation to the intervention price. Our training as economists – and Austrians in particular – equips us with enough knowledge of market activity to make reasonable estimates about what genuinely free market prices might be. Or, to put it another way, those who claim it is futile to estimate the natural rate expose a slight inconsistency if they also make arguments along the lines of “government intervention in the education system ensure that teachers get paid above their market rate”. The ability to identify an “Austrian” business cycle relies upon a judgement about the natural interest rate.

In short, we do not and cannot “know” the natural rate of interest, but we can make reasonable estimates about how it might deviate from the policy-controlled rate.

There have been numerous attempts to measure the natural rate, and they utilise different methods. The following can be viewed as a rough and incomplete overview:

- According to Andrew Lilico the (nominal) natural interest rate is the sum of the inflation target and the sustainable real GDP growth rate.<sup>5</sup>
- The estimate of the long run interest rate in the Federal Open Market Committee’s “dot plots” can be used as a proxy for the natural rate
- The trend real Fed Funds rate has been used to estimate the natural rate<sup>6</sup>
- Janet Yellen has used a DSGE model<sup>7</sup>
- Labauch and Williams have a model<sup>8</sup>
- The FRBSF have used a structural model<sup>9</sup>
- The Bank of England have estimated the UK rate using COMPASS<sup>10</sup>
- Michael Darda of MKM partners uses labour force slack<sup>11</sup>
- Beckworth and Selgin (2010) have used productivity data<sup>12</sup>

The table below shows a summary of some notable estimates.

| Author | Period | R* |
|--------|--------|----|
|--------|--------|----|

<sup>5</sup> See <http://blogs.telegraph.co.uk/finance/andrewlilico/100015883/the-bank-of-england-should-raise-interest-rates-next-week/>

<sup>6</sup> <http://www.frbsf.org/economic-research/publications/economic-letter/2005/october/estimating-the-neutral-real-interest-rate-in3-0real-time/>

<sup>7</sup> <http://macromarketmusings.blogspot.co.uk/2016/01/a-small-step-toward-better-fed-policy.html>

<sup>8</sup> <http://www.frbsf.org/economic-research/files/wp2015-16.pdf>

<sup>9</sup> <http://www.frbsf.org/economic-research/publications/economic-letter/2005/october/estimating-the-neutral-real-interest-rate-in3-4real-time/>

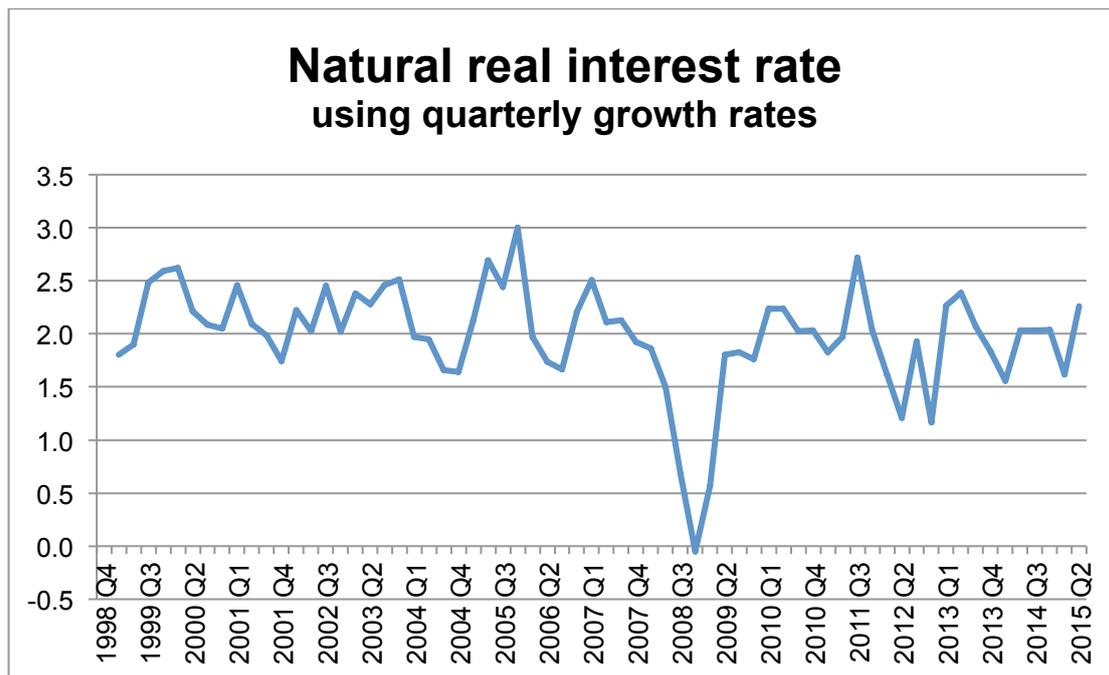
<sup>10</sup> <https://bankunderground.co.uk/2015/08/11/an-estimate-of-the-uks-natural-rate-of-interest/>

<sup>11</sup> <http://macromarketmusings.blogspot.co.uk/2015/03/negative-interest-rates-zlb-and-true.html>

<sup>12</sup> <http://econfaculty.gmu.edu/pboettke/workshop/Spring2010/Beckworth2.pdf>

|                                  |          |        |
|----------------------------------|----------|--------|
| Laubach and Williams             | 2003     | 3.2%   |
| Fels and Pradhan <sup>13</sup>   | Feb 2006 | 2.25%  |
| Morgan Stanley <sup>14</sup>     | Jan 2010 | 2.5%   |
| Andrew Lilico                    | Mar 2012 | 3-3.5% |
| David Blanchflower <sup>15</sup> | Jun 2012 | -3%    |
| MKM                              | 2012     | -2.5%  |

Following Beckworth and Selgin (2010), the chart below shows estimates of the natural rate from 1998-2015.<sup>16</sup> As of October 2015 the real natural rate was 2.3%. Incorporating the GDP deflator of 0.6%, this implies a nominal natural rate of 2.86%.



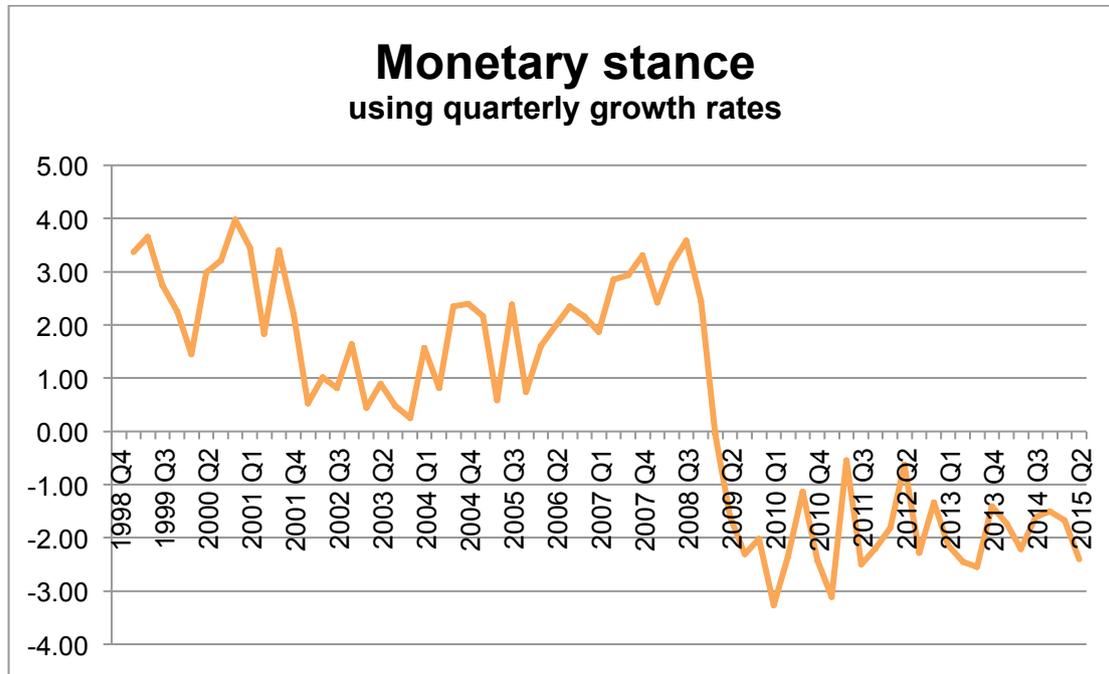
<sup>13</sup> <http://www.ft.com/cms/s/1/6d8e4cfa-a3d8-11da-83cc-0000779e2340.html?siteedition=uk#axzz1aslBJ4sA>

<sup>14</sup> <http://www.telegraph.co.uk/finance/economics/7021000/Neutral-interest-rate-may-be-2.5pc.html>

<sup>15</sup> Source: Twitter (I think he was joking though)

<sup>16</sup> As with Beckworth and Selgin (2010) the coefficients for  $r^n$  is 2% and  $\lambda$  is 0.7%. Data is accurate as of 2015 Q2. A spreadsheet with full workings is available at <http://www.kaleidic.org/reports/>.

Indeed if we compare this nominal rate to the actual short-term nominal interest rate (in particular the “Quarterly average Sterling overnight index average (SONIA) lending rate”) we can establish a gauge of whether policy is too loose or too tight. This suggests that monetary policy was too tight from 1998-2008 but then too loose from 2009-2015.



As Richard Ebeling writes, for Hayek “the scientific question confronting monetary policy was how to ‘neutralize’ money’s effects on relative prices of the economy” (2003, p.142). Garrison warns against economists believing there to be a “Hayek Rule” for the underlying rate that might be superior to a “Taylor Rule<sup>17</sup>” for a policy rate, and he is right. However one argument in favour of the proposed Hayek Rule<sup>18</sup> is that it may do a better job of approximating the underlying rate than the existing monetary framework. Scott Sumner’s NGDP targeting proposal<sup>19</sup> uses market expectations to remove much of the discretion that plagues other monetary rules.

But finally, arguments about the appropriate “rule” should not distract us from the regime, and that these are second best arguments based on an assumption that monetary policy exists. The real insights of the “natural rate” are that even if policymakers *want* to estimate it, we lack the knowledge required to reliably do so. We can do a less worse job at this, but that shouldn’t obstruct efforts to radically alter the monetary regime – to let market forces discover the natural rate, not policymakers.

<sup>17</sup> <http://www.frbsf.org/education/activities/drecon/9803.html>

<sup>18</sup> [http://reason.org/files/federal\\_reserve\\_monetary\\_policy\\_hayek\\_rule.pdf](http://reason.org/files/federal_reserve_monetary_policy_hayek_rule.pdf)

<sup>19</sup> [http://www.adamsmith.org/files/ASI\\_NGDP\\_WEB.pdf](http://www.adamsmith.org/files/ASI_NGDP_WEB.pdf)

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