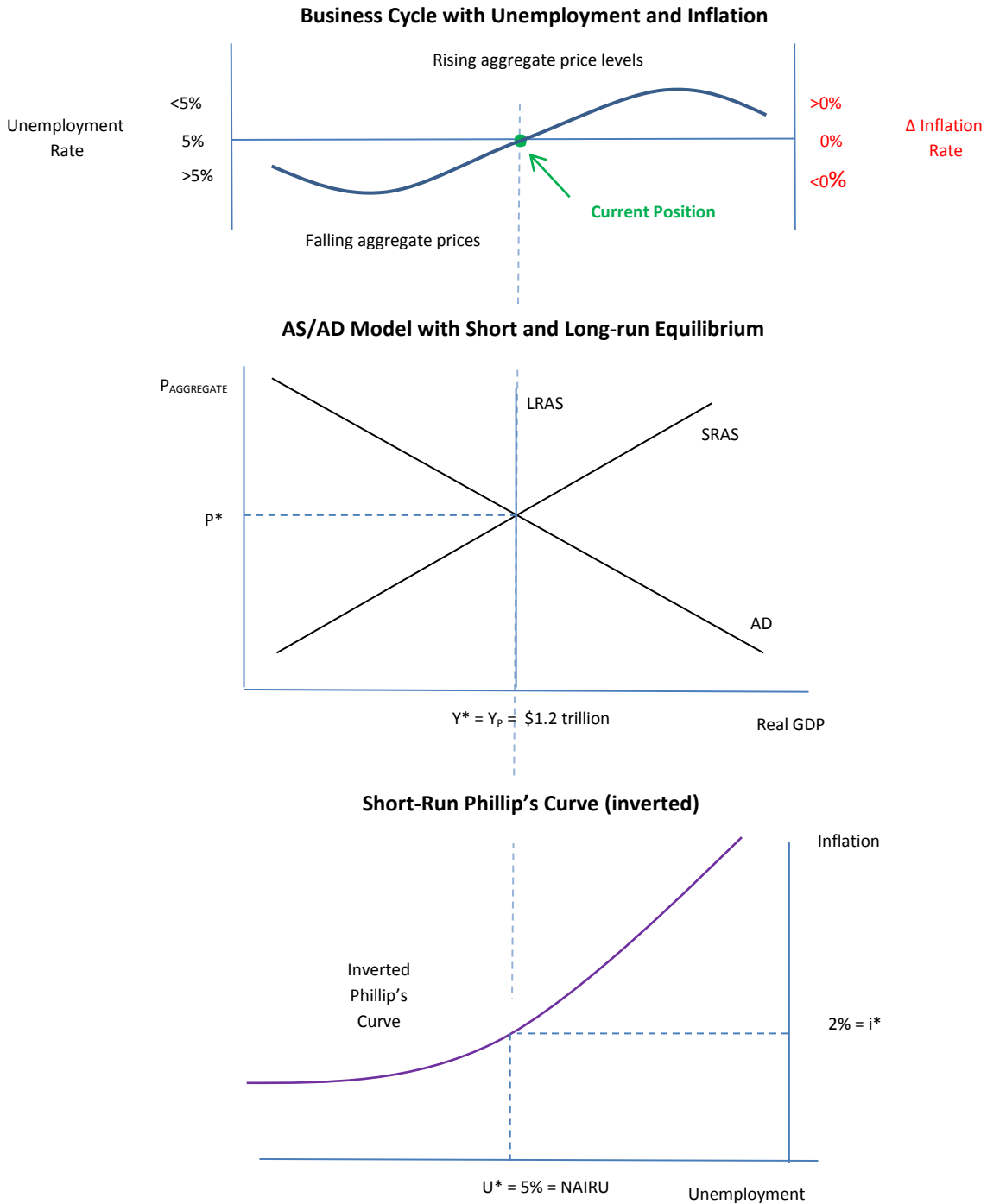


The NAIRU, Phillip's Curve and AS-AD Models¹ In-Class Problem²

Let's assume that an economy is in long and short run equilibrium at a Real GDP of \$1.2 trillion, a stable inflation rate equal to the targeted rate of its central bank of 2%, and unemployment of 5%. *Note the vertical alignment of the Business Cycle, AS/AD and Phillip's Curve Models.*



¹ This problem is intended to present an abbreviated discussion of the included economic concepts and is not intended to be a full or complete representation of them or the underlying economic foundations from which they are built.

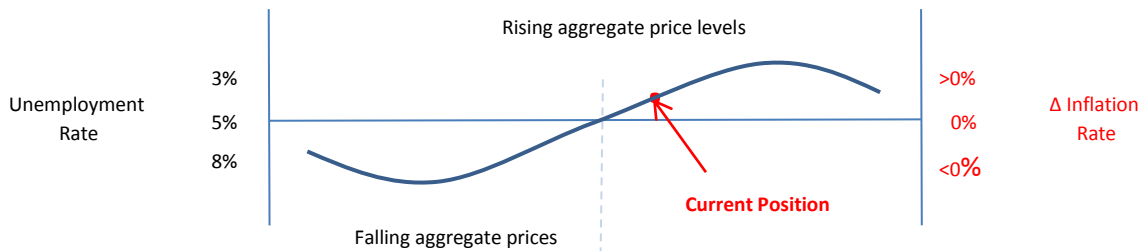
² This In-Class Problem was developed by Rick Haskell (rick.haskell@utah.edu), Ph.D. Student, Department of Economics, College of Social and Behavioral Sciences, The University of Utah, Salt Lake City, Utah (2014).

a) Now, let's suppose that this economy experienced a real increase in GDP of 5%, had the following nominal data points, but without having experienced a change in productive capacity. What might you expect these graphs to look like and what values might be indicated?

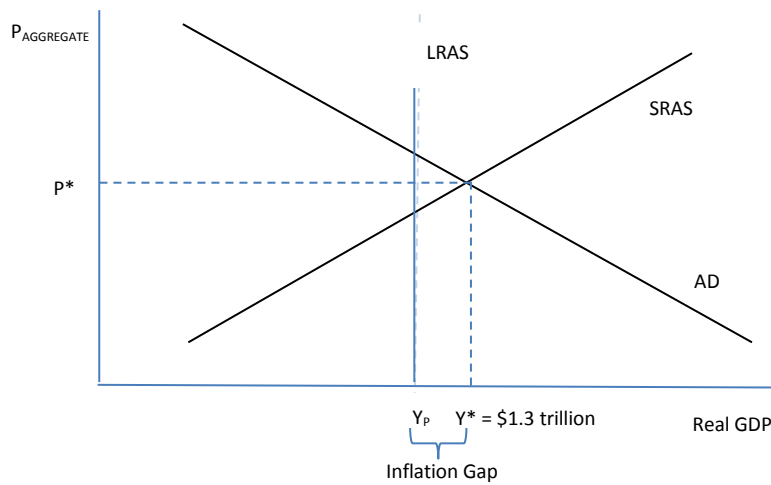
- I = \$225 billion
- G = \$300 billion
- C = \$850 billion
- X = \$225 billion
- IM = \$300 billion

$$\begin{aligned}
 \text{GDP} &= C + I + G + X - \text{IM} \\
 &= \$850 + \$225 + \$300 + \$225 - \$300 \\
 &= \$1,300 \text{ Billion}
 \end{aligned}$$

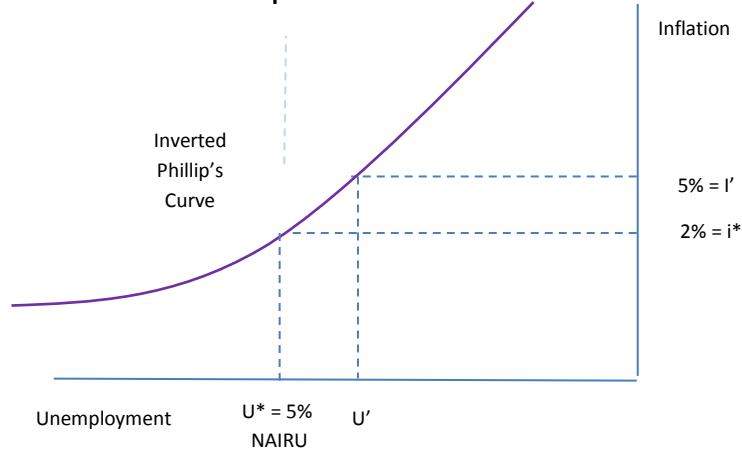
Business Cycle with Unemployment and Inflation



AS/AD Model with Short and Long-run Equilibrium



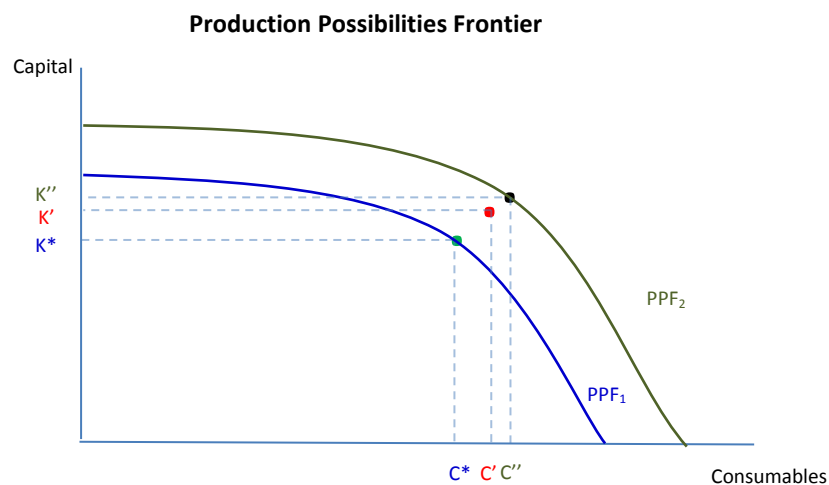
Short-Run Phillip's Curve - inverted



b) What would you expect the inflation rate to be based on the information provided in a)?

If the targeted level of inflation (2%) is reflected in the original condition, and the economy experienced a change in Real GDP of 5%, we might expect that to reflect an inflation level of 7%. But this is a little more complicated than it might appear and begs the question, “Does Real GDP growth reflect, foretell, or possibly even motivate inflation?”. The answer is typically thought to be “yes” but it’s not always been observed as such.

c) Assume that the subject nation produces two goods: Capital (K) and Consumables (C). How might the nation’s PPF appear in light of these changes? Show the PPF for the original period and with whatever shift might be appropriate based on the information provided in a).



There may be numerous resulting PPF structures based on the information provided. The one shown above is one of those that enjoy some level of plausibility. Even though we normally argue that a nation can’t produce beyond its PPF, we do recognize that it is possible to do so in the short term and that in some cases nations will seek to do so in order to effect some long term benefit (in this case greater capital accumulation) at some short or long term cost (inflation, pressure on workforce, etc.)

We can suppose that even though the nation produced beyond its PPF in period one (PPF_1), it was willing to endure some short term inflation increase in exchange for the opportunity to provide more consumables and capital. Both of these potentially allow yet greater output in a future period (PPF_2) as the added Capital yields higher productivity and the additional consumables may also yield improved productivity (think better nutrition, healthcare, education, etc.).