

Dylan McDowell

David Barrus

Econ 499

25 January 2018

Research Topic

1. Craft of Research Ch.3 Summary

Chapter three in the "Craft of Research" seeks to help students develop a topic of research by identifying what makes a research topic valuable. Throughout the chapter the author asks the reader to put themselves in several scenarios that earmark what thoughtful development of a research topic looks like. Throughout the reading I found myself immersed in the examples at hand and gave a lot of thought as to how I was going to approach my research topic.

Recognizing the somewhat cliché nature of claiming to, "start with what interests you." The author does a good job explaining that it is not feasible to simply pursue a topic that is interesting but a topic that will actually answer a question and perhaps even solve a problem. The author gives the example: **Topic:** I am studying _____ **Question:** because I want to find out what/why/how _____, **Significance:** in order to help my reader understand _____.

These three steps should help you formulate a topic that not only interests you but provides some type of value to your reader. Essentially, why should anybody care about your research? If you cannot answer that question then your research topic probably hasn't been fleshed out enough.

The author next focuses on narrowing down a broad topic into something that can have meaning. He says, "At this point, your biggest risk is settling on a topic so broad that it could be a subheading in a library catalog: spaceflight; Shakespeares problem plays; natural law. A topic is probably too broad if you can state it in four or five words..." The ultimate goal is to narrow

down your research topic into something specific that follows the framework of the steps mentioned above. When our topic becomes focused we can then start to ask questions that will move us a long in our research.

There are many different kinds of questions we can ask when looking into our research topic and the author proceeds to list out an assortment of questions that could be appropriate when digging for more information. The author then closes the chapter with advice on what to do when choosing a topic.

2. Craft of Research Ch 4 Summary

In Chapter four the author writes about how to distinguish practical and research problems. Many times a research problem starts off as a practical problem. He gives the example of: **Practical Problem:** My Brakes are screeching. **Research Problem:** Can I find a brake shop in the yellow pages to fix them? **Research Solution:** Here it is. The Car Shoppe, 1401 East 55th Street. **Practical Solution:** Drive over to get them fixed.

We often times start off with a practical problem and then turn it into a research problem just by seeking to solve the initial problem. He says in many ways hard problems are structured the exact same way. He ultimately describes the process as: Practical Problem \Rightarrow Motivates \Rightarrow Research Question \Rightarrow Defines \Rightarrow Research Problem \Rightarrow Leads to \Rightarrow Research Answer \Rightarrow Helps to Solve \Rightarrow Practical Problem. A full framework of research defined in a circle.

Throughout the rest of the chapter the author dives into creating a dynamic of differentiating between practical problems and conceptual problems. By being able to tell the difference between the two we can begin to ask the right questions that put our topic into perspective. He talks about how inexperience is often times not what sets us back as researchers but not being able to fully understand the question your topic asks.

3. Outline of Research Topic

Many people have a strong belief in the law of averages. Or rather, they believe that it is often the culmination of their actions that influence their future decisions. Nassim Nicholas Taleb, a prominent scholar and risk analyst, believes in quite the contrary. Most often it is the unexpected events that have the largest influence in shaping the trajectory of future outcomes. Taleb says,

”I don’t particularly care about the usual. If you want to get an idea of a friend’s temperament, ethics, and personal elegance, you need to look at him under the tests of severe circumstances, not under the regular rosy glow of daily life. Can you assess the danger a criminal poses by examining only what he does on an ordinary day? Can we understand health without considering wild diseases and epidemics? Indeed the normal is often irrelevant. Almost everything in social life is produced by rare but consequential shocks and jumps...” (Taleb)

There is importance in studying the improbable. One major event that comes to mind when thinking about massive unexpected shifts is the state of the economy. Many economists over the years have attempted to learn about the nature of the economy. Some experts believe that it is possible to predict a recession in the economy, while others believe that the intricacies obfuscate the ability to tell the signal from the static.

This research paper will attempt to validate the former by building upon the previous models of Hamilton, Chauvet, and Piger. While many models have been constructed through research, we seek to add upon the class of dynamic-factor mixed-markov switching models (DF-MMS). In the past, ARIMA models have been shown to be restricted under the assumption of linearity (Hamilton). DF-MMS models allow for non-linear estimation which better suits the analysis of economic data.

Currently, the Federal Reserve employs a DF-MMS model when projecting probability of recession in real-time (FRED). This projection takes into account four different indices: non-farm payroll employment, the index of industrial production, real personal income excluding transfer payments, and real manufacturing and trade sales. The DF-MMS model applied to these indices was developed by Chauvet in 1996 and is still currently used today. While these indices provide valuable insight, we intend to improve upon the model by adding in US Treasury Bond spreads and USD futures prices as possible indicators for economic regime switches.

Another aspect to which Chauvet's model could be improved is establishing a three state unobserved regime switching model as opposed to the two state model employed in the literature. This is because the economy will often experience times of expansion, times of minor recession, and unexpected drastic contractionary periods. By allowing for three states instead of two, it will be possible to detect more subtle movements and features in the state of the economy.

Several other papers have improved upon the model of Chauvet by using Bayesian Estimation methods for the parameters (Chauvet and Piger). These topics will be explored in throughout the research but at a given point in time a final method of estimation will be decided upon for the final model. It is also important to note that previous models continue to gain accuracy as they age given the new data further smooths out the probabilities of recession. The goal is to build a model that is accurate in the present as well as accurate into the future.

As mentioned previously, it is the unlikely that has the most profound effect in society. By developing a better understanding of the elusive nature of the economy it is possible build an economy that is protected against the improbable. If the probability of recession can be estimated in real time then then it should be expected that the world would experience an extreme shift in paradigm and how companies approach risk in the market place. This is the ultimate problem we seek to solve by building upon the body of research.

Works Cited

- Chauvet, Marcelle and Jeremy Piger. “A comparison of the real-time performance of business cycle dating methods.” *Journal of Business Economic Statistics* 26.1 (2008): 42–49. Print.
- FRED. “US Recession Probabilities.” 2018. Web.
- Hamilton, James D. “A new approach to the economic analysis of nonstationary time series and the business cycle.” *Econometrica: Journal of the Econometric Society* (1989): 357–384. Print.
- Taleb, Nassim N. *The Black Swan: The Impact of the Highly Improbable*. New York: Random House, 2007. Print.