**MRP Research Proposal**

I have been reading through much of the relevant literature on automation, and a theme that keeps coming up is the phenomenon of job market polarization, both of employment shares and wages. It is well-established in the literature that technology has played a significant role in the restructuring of labour markets. However, *how* technology influences labour markets, and specifically its role in labour market polarization, is less known.

Prior to the new millennium, most authors relied on the “skill-biased technological change” model which suggests that “computerization” leads to an increase in the demand of college-educated workers and could explain rising wage inequalities (Autor, Katz, & Kearney, 2006) (Goos, Manning, & Salamons, 2014). However, the findings by Autor, Levy, and Murnane (ALM) (2003) put forth a more nuanced understanding for how technology impacts labour markets, and how this impact could contribute to trends in labour market polarization. Their research shows that technological change or “computerization” mostly results in a decrease in demand for routine manual and cognitive skills and an increase in demand for non-routine and cognitive skills.

Goos, Manning, and Salomons (2014) refer to this as the “routine-biased technological change” model. Their paper finds that over 1993-2010, job market polarization is pervasive across 16 Western European countries, and that much of that polarization can be explained using the RBTC model. Autor, Katz, and Kearney (2006) find that this trend is also present in the United States, implementing a similar “model of computerization”. Goos and Manning (2007) find evidence of labour market polarization in the UK and conclude that the “routinization” hypothesis developed by ALM (2003) is able to better explain labour market polarization, although other factors may also be responsible.

There has been little research done on the trend of labour market polarization in Canada. The one paper that I have been able to find, by Green and Sand (2015), finds that while there are similar patterns of polarization between Canada and the US (at least in employment, not wages) the model for technological change developed in the US (and abroad) does not actually explain labour market polarization in Canada. I found this result interesting, as that would make Canada the only exception among Western countries that doesn't follow the "routine-biased technological change" model that much of the recent literature is predicated on.

I therefore believe my research project should read as follows. Polarization of the Canadian Labour Market: To What Degree is Automation Responsible. Green and Sand (2015) seem to be the only authors to have observed the issue in Canada, and their conclusions run contrary to the prevailing RBTC model. This is precisely why I think it is worthwhile to investigate to what degree automation has played a role in an effort to test the prevailing “routine-based technological change" model in the literature and challenge results obtained by Green and Sand (2015).

To conclude, I believe that my paper will follow a similar structure to Green and Sand (2015), however with several important caveats. The paper fails to provide an empirical model to determine the impact of technology on labour market polarization. Therefore, I will implement the “routine-biased technological change” model from Goos, Manning, and Salomons (2014) to test whether or not automation has had an impact on labour market polarization in Canada (also can look at Autor and Dorn (2013)). Secondly, Green and Sand (2016) rely on a 1991 SOC classification for occupation breakdown. I think it may prove useful to use a more up-to-date occupational classification, such as the NOC Classification. NOC versions include 1992, 2001, 2006, 2011, and 2016. Finally, the time period needs to be determined. I believe that adopting a more recent time frame (for example, 1990-2020) may prove insightful in gaining a more contemporary understanding of the polarization issue in Canada.

I will do this in three ways: going beyond the time period of their datasets (1972-2012), perhaps using different datasets altogether to add to the robustness of the results (for example, NOC classification instead of SOC), and implementing an empirical model similar to the “routine-biased technological change” model from Goos, Manning, and Salomons (2014) to observe the impact automation has on labour market polarization. I believe that the combination of these variations to the previously established literature will help advance the understanding of the topic of labour market polarization in Canada, specifically observing to what degree automation has played a role.

**References**

Autor, D., Levy, F., & Murnane, R. (2003). “The Skill Content of Recent Technological Change: An Empirical Exploration”, The Quarterly Journal of Economics, 118(4): 1279–1333.

Autor, D. & Dorn, D. (2013). The Growth of Low-Skill Service Jobs and the Polarization of the US Labor Market. *The American Economic Review*, 103(5), 1553–1597.

Autor, D., Katz, L., & Kearney, M. (2006). The Polarization of the U.S. Labor Market. *The American Economic Review*, 96(2), 189–194.

Goos, M. & Manning, A. (2007). Lousy and Lovely Jobs: The Rising Polarization of Work in Britain. *The Review of Economics and Statistics*, 89(1), 118–133.

Goos, M., Manning, A., & Salomons, A. (2014). Explaining job polarization: routine-biased technological change and offshoring. *The American Economic Review*, 104(8), 2509–2526.

Green, D. & Sand, B. (2015). Has the Canadian labour market polarized? *The Canadian Journal of Economics*, 48(2), 612–646.