Practice Problem Set 1 (ANSWERS)

1.a. Which career path should Anthony follow?

To answer this we must compare the present value of the income streams:

P.V. of option i:
$$\frac{20,000}{1} + \frac{20,000}{1.1} + \frac{20,000}{(1.1)^2} = $54,710.74$$

P.V. of option ii: $\frac{-5,000}{1} + \frac{50,000}{1.1} + \frac{50,000}{(1.1)^2} = $81,776.86$
P.V. of option iii: $\frac{-10,000}{1} + \frac{-10,000}{1.1} + \frac{90,000}{(1.1)^2} = $55,289.26$

b. He must place an implicit consumption value of \$81,776.86 - \$55,289.26 = \$26,487.60 on being an art historian.

- 2.
- **a.** This estimated coefficient corresponds to wages that are about 34% higher in the public sector, or private sector wages that are about 75% as high as public sector wages.
- b. The researcher's conclusions are flawed because he/she has failed to include a full set of control variables in the earnings regression equation. There are many other determinants of wages besides the public sector/private sector factor that must be taken into account in order to be in a position to claim that ceteris paribus, public sector workers earn 34% more than their private sector counterparts. As the equation now stands, the estimated coefficient of 0.336 is capturing many influences on wages along with the direct influence of the public sector. We say that that coefficient is affected by omitted variable bias.

3.

- **a.** The first step is to list the payoffs that apply in each period for each option. If he stays in Newfoundland, the payoffs are Y_0 in period 1 and Y_1 in period 2. If he migrates to Toronto, the payoffs are -M (a cost rather than a gain) in period 1 and Y_T in period 2.
- **b.** He will migrate if the discounted present value of his benefits, net of costs over the entire two period time horizon, exceeds his net benefits from remaining in Newfoundland. The equation is the following:

- $M + Y_T / (1 + r) > Y_0 + Y_1 / (1 + r)$

After a little algebraic manipulation, we arrive at the desired result. The basic question is whether the higher level of income that he can expect to receive in Toronto in period 2 is sufficient to compensate him for the explicit cost of migration as well as the opportunity cost of the foregone earnings in period 1. The higher the interest rate, the less likely he is to

migrate, ceteris paribus. This result stems from the fact that he has to wait until period 2 before he captures any benefit from migration, and a payment in the future loses value as the interest rate rises. Furthermore, he has to shell out money in order to migrate, which he might have to borrow. As the interest rate, the migration option becomes relatively more expensive as borrowing charges increase.

- **c.** He has to ascertain that these estimates of expected earnings are derived from individuals with roughly similar attributes as his own. If the sample of Newfoundlanders in Toronto is composed of individuals with approximately the same level of education, similar occupations, similar sectors of the economy, similar levels of experience as he has, then this procedure might provide an accurate result.
- **4.** The minimum wage prevents workers from investing in on-the-job training and discourages employers from providing firm-specific training to low-income workers.



a. To analyze the impact of a minimum wage on training consider the following diagram

MRP during training = MRPT MRP once trained = MRP* Without training MRP = MRPa

Suppose that an effective minimum wage is legislated (i.e. above Wa) equal to Wmin. The impact on training will depend on the type of training (general v.s. specific).

General Training:

In the absence of the minimum wage the worker would be willing to invest in training if the opportunity cost of training (area C) is less than the benefit resulting from the increase in wage (area B+A).

The minimum wage forces firms to pay Wmin and, therefore, the worker is not able to pay for his or her training.

We know that the firm will not pay for training in the case of general training for the reasons discussed in class. Thus, the training is unlikely to occur.

Specific Training:

The firm might be willing to pay for training in this case but the worker would not.

However, the minimum wage increases the costs of training from area C to area C+D and reduces the benefit of training from area A+B to area B. Thus, specific training is less likely to occur.

b. Government social transfer programs that decrease geographic mobility among workers should be removed.

Agree. The design of social transfer programs will usually reduce mobility. The vast majority of the resources allocated to social programs in Canada are for what we call passive programs. Their explicit and sole objective is to alleviate the hardship faced by unemployed workers by partially replacing their income. They indemnify workers for the income that they lose from unemployment, but they do little to induce workers to take more pro-active action to reduce their vulnerability to unemployment (such as upgrading skills, learning more about outside opportunities, etc.) They are provided to workers without any strong conditions for job search, and they tend to make unemployment more financially supportable for its victims. The signal that the market sends to workers in high-unemployment areas – migrate to greener pastures – is muted by the unemployment insurance program.

There are government programs that could encourage mobility, however, such as relocation subsidies. These types of measures are called active measures because they are explicitly designed to alter labour market behaviour and hence employment patterns.

There has been a fierce debate over the reform of social programs so that they do not undermine migration activity and other objectives of economic policy. Defenders of the current programs say that the disincentives, if they exist, are not as important as the benefits afforded by the programs. These programs meet their goals of alleviating hardship and fostering more equity. They also never fail to claim that the real problem in high unemployment regions is a global lack of jobs, which is sometimes attributed to a deficiency of aggregate demand. The most effective government policy measures, according to this view, are to stimulate the macroeconomy in order to create jobs. With a healthy labour market, the disincentives to job search embedded in the unemployment insurance system would not come to play. See page 296.

c. Non-competitive factors likely explain the public-private wage differential.

Agree. While it may be the case that non-pecuniary differences can also help to explain this wage difference most of the evidence suggests that such differences should lead to wages that are lower in the public sector. It is commonly held that the public sector enjoys an advantage in non-pecuniary benefits such as job security, fringe benefits and political visibility. Job security is thought to be beneficial in the public sector as it curtails political patronage and provides continuity in the work done by the civil service. The size of the civil service also provides a large portfolio of jobs for reallocating their workforce, further adding to job security. There is also the suggestion that the public sector exhibits more in the way of fringe benefits than the private sector. This may be due in part to the fact that the public sector can

finance current actions through imposing costs on future generations of taxpayers. Benefits such as early retirement plans and pensions can be considered deferred wages, which will be born by future tax revenues. Finally, political visibility can also be thought as a non-pecuniary advantage, being seen as an end in itself or a means to other ends, depending on the individual.

Non-competitive factors are the more likely explanation for the wage differential between the public and private sector. Factors such as a political, rather than a profit constraint, inelastic demand for public sector labour, unionization and a competitive floor but not a competitive ceiling all provide very convincing explanations for the apparent difference between wages paid in the public sector with those paid in the private sector. The public sector is not generally profit constrained in the usual way. Governments are typically politically constrained rather than profit constrained and political constraint tends to be less binding. Governments answer to taxpayers and taxpayers are diffuse and apply pressure to the government only every few years. In addition, many public services are considered essential. Thus, the demand for public sector labour tends to be inelastic. This allows union representatives of public sector workers to bargain for wage increases without worrying too much about any possible employment effects. The combination of inelastic demand, no profit constraint and high rates of unionization is the likely explanation for the estimated 5-9 percent premium that public sector employees enjoy. While economic forces ensure that below market wages are not paid they do not preclude the payment of wages that are higher than market wages.