

## The "Skills Premium"

During research and literature review, several economics articles were discovered which introduced the term "skills premium." To paraphrase these articles, "skills premium" [SP] is that amount above a common baseline or minimum hourly wage which the "average" employer must pay to obtain a worker with given set of skills, knowledge, attitudes, talents, etc. The baseline hourly wage can be established through common usage or by legislation as is the case in the United States by minimum wage laws.

Because these were articles from economics journals, the existence and behaviors of the SP were examined using the tools of classical and neoclassical economics, which for our purposes is the same as free market and free trade economics. Indeed, several of these journal articles overtly posited that SP was the same as any other economic good and was subject to the same economic forces and effects. It should be noted that economics is an "amoral" science or discipline in that it is value free and that the topics of investigation are how various parameters of an economy change when other parameters are varied. As soon as moral values and ethics enter the discussion, the discipline is no longer economics but ideology or theology. In this context, when the word value is used in the following section it is specifically limited to the money sense. With this caution, let me summarize the results of assuming that the SP is an economic good using the free market / free trade economic theory.

1. It is possible to have a negative SP. If a person has or exhibits traits, characteristics, attitudes, etc., undesired by their employer or society, than it is likely that they will find only the most marginal employment with compensation

below the accepted minimum, possibly outside of mainstream economic activity, for example picking up bottles and cans along the roadside for the deposits.

2. If the SP is an economic good that the employer must purchase or pay for, then there is an incentive for the employer to reduce its cost like the cost of any other economic good or input.
3. The value of a SP depends on the supply of the particular skill vs. the demand for that particular skill.
4. A high SP motivates people to acquire that particular skill.
5. As more people acquire the particular skill, the supply relative to the demand increases, thus the value of the SP is reduced.
6. When enough people acquire the particular skill, the SP becomes zero, and therefore a component or characteristic of the baseline or minimum wage.
7. While not strictly part of classical economic theory, the extremely fluid and dynamic nature of current job markets causes rapid changes in the value of the SP. For example, the "skill premium" for COBOL programming was high for many years as long as most American businesses had centralized data processing departments and mainframe computers which generally used COBOL. The shift to distributed computing through the use of networked PCs resulted in a substantial oversupply of COBOL programmers relative to the demand with a dramatic reduction in the "skills premium," which in many cases became zero in that no jobs were available. With management realization ( and in some cases panic) over the year 2000 problem with the older COBOL program which used

only the last two digits of the year such that the program would interpret the date 2001 as 1901, the SP for COBOL programming suddenly increased to the extent that schools and institutes are again offering COBOL programming courses because of student demand resulting from the greatly increased SP.

Let us examine what these items implies for VOTE in the practitioner and policy maker context .

First, when an economist (or a person using the perspectives of economics, that is an employer) makes the statement that a labor shortage exists in a particular category, what is probably meant is that the SP which is currently necessary to acquire or retain an employee with the desired skills is "excessive." In (too) many cases "excessive" is defined as being greater than zero. This insight helps to explain or resolve the "problematique" of having the National Science Foundation trumpeting an existing large and growing shortage of scientists, engineers and technicians simultaneously with the public announcements of professional accrediting organizations such as the Technology Accreditation Commission / Accreditation Board for Engineering and Technology [TAC/ABET] and their member organizations such as the National Society of Professional Engineers [NSPE] that there is currently a gross oversupply of scientists, engineers and technician with schools currently producing two graduates for every available job, not counting those currently unemployed (in their profession) but qualified candidates and international employees in the United States on special work visas. The resolution is that these groups are talking about two quite different things. The NSF is observing, from the economic and employer perspective, that the SP is still "excessive" (that is above zero) for

the positions of interest, while TAC/ABET and NSPE is observing, from the perspective of the employee or worker, that the "skills premiums" for these positions are rapidly falling.

Items 1 through 6 have the following implications for VOTE policy makers, practitioners and participants:

1. While there is no ulterior motive in the sense of a plot or scheme to defraud, the employer has every incentive to obtain labor at the cheapest possible price just as they do for their other inputs such as machinery, materials and capital. These inputs interact. For example highly skilled labor, with an accompanying large "skills premium," can be used to compensate for lessor or variable quality materials, obsolescent machinery, and they can do this with minimal supervision, thus economizing on the need for capital investments and indirect labor such as supervisors and inspectors. Conversely, the employer may decide to minimize or even eliminate their need to pay a SP for direct labor by work simplification, machinery / methods improvements such as automation, standardization of materials and close supervision / inspection. This trend is especially clear in organizations in the later stages of economic and institutional evolution where institutional ownership has become indirect and fragmented, management has become professional (impersonal) and output has become abstracted into a branch of number theory. An additional factor is the discovery by Demming and many other investigators in the field of Statistical Quality Control that one of the more productive and effective techniques to standardize, improve and maintain high

product quality is to eliminate any way for the worker to directly affect the operation. For example, if the operation is to drill a hole in a workpiece, the speed and feed rate of the drill should not be under manual operator control but should be machine controlled so that these remain constant from part to part, day to day, operator to operator. Indeed, Demming and many others would advise that not only should the feed rates and speeds of the drilling operation be standardized but also the type and manufacturer of the drill bit, frequency of tool change, the jigs and fixtures, the drill press, the coolant, and any other item that is possible to control, in order to reduce and as possible eliminate variation in the parts produced. These two objectives, (1) reduction and as possible elimination of the "skills premium," and (2) minimization of product variation, combine to cause most employers to structure their operations so that only minimal employee skills are required and desired other than the ability to follow instructions exactly. It can be, and frequently is, argued that this is only partially true and is correct only for routine and repetitive job elements, however as the routine and repetitive job elements are what generates profit for the vast majority of employers, employees and activities, then it is correct in the vast majority of cases. Accordingly, although there always will be exceptions to this general principal, VOTE participants, either as practitioners or learners, must assume that any occupation or specialization which is primarily conducted or performed in a employee / employer relationship, will be analyzed, subdivided and mechanized / automated to the extent necessary to minimize and as possible eliminate any skills premium and to standardize the output. Most apparent exceptions to this general rule are due to

the (possibly unstated and even unconscious inclusion) addition of non-traditional activities such as supervision, training, and innovation to the "normal" routine and repetitive job elements. Even this apparent exception disappears when a more holistic or inclusive view is taken of the entire process, because these higher level activities such as supervision, training and innovation which traditionally justified a higher SP are now being conducted by individuals with a lower or even no SP. Thus the general rule is that all wage occupations, specializations and professions tend to become standardized minimum wage activities over time, subject to the conditions and exceptions in the item 2 discussion below.

2. The principal of this item is that the existence and size of the SP depends entirely on the interaction of two factors **totally outside of the control of the individual**, specifically: (1) how many people currently have and willing to apply the particular skill; and (2) how large is the current demand for that skill relative to the supply. Thus it is entirely possible to possess a rare skill or knowledge, such as the ability to play the Chinese nose flute, but to secure no SP for that skill or knowledge because of a lack of demand. This seemingly simple relationship is complicated in that there is neither a fixed skill supply nor a fixed skill demand at any given point in time, but rather a supply that tends to increase as the SP offered increases and a demand that tends to increase as the SP decreases. Thus there are three possible conditions for any given SP: (A) The number of people who currently possess a given skill and are willing to apply it at this level of SP are fewer than the number of people currently needed (or desired); (B) The number of people who currently possess a given skill and are willing to apply it at this level of SP are about equal to

the need / demand; and (C) more people possess the particular skill and are willing to apply it at this level of SP. Subject to the continuing effort of employers to reduce the SP to zero as discussed above, Free Market Economics 101 (and experience) indicate the following likely outcomes for these conditions:

- a) The SP offered by the employer will increase to the level necessary to cause enough workers who possess the desired skill to apply it to meet the perceived needs of the employer, (or the number of people thought to be required will be reevaluated and desires will be separated from needs).
- b) Because there is a match between the numbers of workers available and the number of workers required the SP will remain constant. A stable SP for one particular skill does not necessarily indicate a stable labor market. For example, a particular occupational niche may require a combination of skills, which include those necessary for several others, thus a stable SP in one particular category may coexist with shortages or surpluses in others. This is particularly true for the increasingly common multi-occupational or multi-professional employee.
- c) Because a surplus of workers with the given skill and who are willing to apply it for the SP offered exists, the employer can reduce the SP until the number of workers available matches the number of workers required. This can result in either an increase in the total number of workers in that category for the same cost (worker banking) or the overall cost can be reduced for the same number of employees. (cost avoidance)

3. Because most individuals' objectives for vocational education is increased income, that is higher individual SPs, there is a predictable tendency for VOTE practitioners, policy-makers and participants to concentrate on skills and occupations with high perceived SPs, subject to other factors such as the participants' interests, parental guidance / prejudice, opportunities for local employment, social acceptability, etc. The general principal is that this results in VOTE concentration on a few, currently high SP occupations, subject to two qualifications. First, high is a relative term, as in high compared to what. Second, the perception of high SPs is not the same as the existence of high SPs, which are frequently assumed to exist because of a publicized “shortage” in a particular specialty. As previously indicated, the word “shortage” is used in the employment context with very different meanings by economists / managers and the general public. The effects of the free market discussed under the following item indicate that this cycle of “creaming” or concentrating on “high” SP occupations will continue until NO occupations will have a significant SP.
4. Most VOTE programs have become highly efficient and highly effective in the context of rapid education and training in specific job skills and occupations. What may have required four years or more under the traditional master / apprentice procedures can frequently be accomplished in one year or less. Indeed, traditional baccalaureate programs in technical areas such as computer programming have been reduced from four or five years to one year or less by many proprietary schools. This “compression” has both good and bad effects. It is good in that demands by the market economy can be rapidly met, that is

whenever an occupational niche exhibits a “high” SP, a large number of qualified workers will be rapidly trained to meet this demand, however this also has a downside. The rapid training possible by current VOTE means that high SPs will exist only for a very limited amount of time because the excess of demand over supply can be met so quickly, unless non-economic factors (restrictions) such as licensure or union membership restrictions prevent operation of the free market. The general principal is that any significant SP which currently exists will rapidly disappear.

5. By definition, as SPs approach zero, these become skills expected in the general population and thus required for employment at the baseline or minimum hourly wage. An example of this is the ability of drive a car. At one time this was a skill which few people possessed, and therefore a chauffeur had a relatively large SP when cars were still new and somewhat hard to operate. As cars became common and the operations were “automated” as in the introduction of “automatic” transmissions and “automatic” chokes any SP for the specific ability to drive a car became minimal. While this example is correct for the great majority of people, exceptions do exist. For example, successful race car drivers are very well compensated, and drivers of specialty vehicles such as large trucks and busses do continue to command a slight SP, which is affected by both economic forces (that is excess of demand over supply) and non-economic forces such as licensure requirements (CDL) and union membership. The very limited number of paid positions for race car drivers, at most a few hundred world wide, excludes this from serious VOTE consideration. The extremely high driver turnover in the

trucking industry (which is the proximate cause for the continuing demand) indicates that while the SP is perceived to be high enough to attract large numbers of new applicants, in reality the SP is inadequate to compensate for undesirable working conditions such as long and frequent family separations. The principal is that the amount of skills necessary for minimum or baseline employment continually increases without a corresponding increase in the minimum or baseline compensation.

6. The extremely unstable and unpredictable nature of the current economy, combined with the current ability of VOTE to rapidly produce qualified workers for almost any occupational niche, means that it is no longer possible, except in the most general sense, to engage in meaningful career or occupational planning, especially in the context of acquiring and maintaining a high SP. Indeed, the current situation resembles a bingo game in which the players (workers) have a number of genetic and acquired characteristics, and if the economy by chance happens to need the combination of characteristics that only a few workers possess then these “win” and all the rest lose, at least until the next roll of the dice. (It should be noted that if many workers have the required / desired combination of characteristics, then there is no SP because this is a general or baseline occupational niche.) In this sense, VOTE has become more like a seller of lottery tickets where the more tickets a person buys the better their chances are to win, than the traditional perception of VOTE as a savings bank into which you invested your money (time) and which would then pay you interest indefinitely. Although the old adage “The harder I work, the luckier I get” may still apply, the

operational principal of this item is that the acquisition and maintenance of a high personal SP is now mainly a matter of chance or luck.