WEB APPENDIX
for
Determinants of Pay Levels and Structures in Sales Organizations

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To lend greater confidence to our hypotheses and findings, we first explored the data[1] with quadratic regressions (see Figures 1 and 3 for local and international firms respectively). The estimations are presented in this Web Appendix. We used 40 evenly-spaced intervals of Hay points (job challenge) and, for each, recorded the average take-home pay in this interval. Quadratic regressions on these constructed data points produce fitted curves that appear to be quadratic, and for which the slope for sales managers is steeper than that for salespeople for high values of Hay points. Similarly, the same phenomena appear in Figures 2 and 4 where we used non-parametric curve estimations to represent the relationship between take-home pay and Hay points. In Figures 2 and 4, we fitted a smooth line using a spline routine (i.e., using a cubic spline that minimizes a linear combination of the sum of squares of the residuals of fit and the integral of the square of the second derivative; see Reinsch 1967[2]). As can be seen on those graphs, the relationships are quadratic and the slope for sales managers is steeper than that for salespeople for high values of Hay points. Specifically, we do not observe a large cluster of points near the center with only a few in either tail. Thus, with a substantial number of data points all along the function, the relationship is in fact curvilinear.

We also conducted analyses on gross income instead of take home pay, presented in Figures 5 through 8. These plots confirm that (a) the relationships are quadratic, (b) the curvatures are less accentuated, and (c) the slope for sales managers is steeper than that of salespeople for high values of Hay points. In essence, the tax regime matters—not for its own sake, but because it dials up the amount of pre-tax money needed to create meaningful post-tax differentials. This phenomenon of "raising the stakes" intensifies the various impacts we hypothesized, thereby resulting in greater regression coefficients as shown in our HLM analysis with gross income (available from the authors). Thus, take-home pay is a motivating signal of the company's valuation of one's work.

Finally, because there are substantial variations across industries, we provide the plots shown in Figures 9 and 10, where we replicate the analyses from Figures 1 and 3 respectively – but now with both job challenge and take-home pay being mean-centered -- and the corresponding quadratic functions.

Overall, those plots are consistent with our theory. However, it is important to understand that this constructed data set is not a true depiction of our full data set. Any given data point represents an average income figure for a given range of Hay points – but does not control for how sparse or full the data are in that range of Hay points. Moreover, the depicted relationship between job challenge and pay, does not take our other independent variables or the substantial variations across industries into account. Thus, one must interpret these additional plots with care.

[1] We thank an anonymous Reviewer for requesting these plots.
[2] Reinsch, Christian H. (1967), "Smoothing by Spline Function", *Numerische Mathematik*, 10, 177-183.

Figure 1

Local Firms
Quadratic Regressions Using 40 Intervals of Hay Points

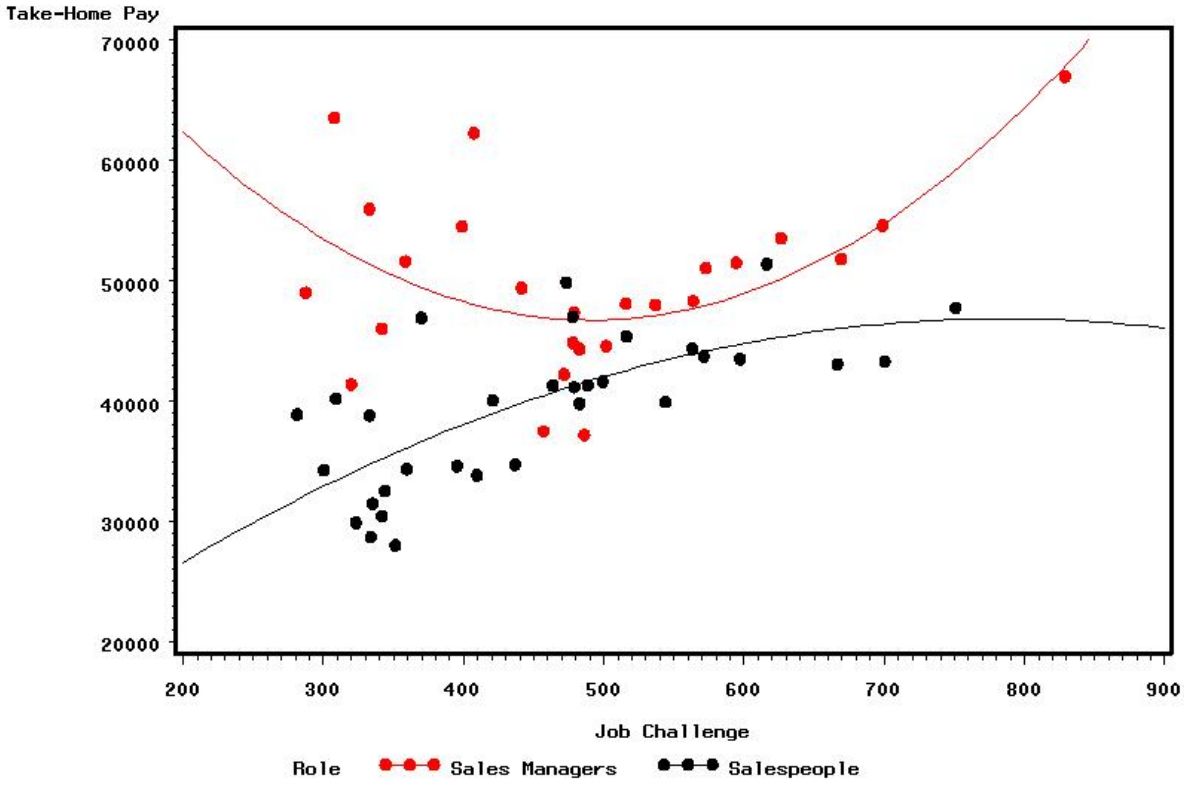


Figure 2

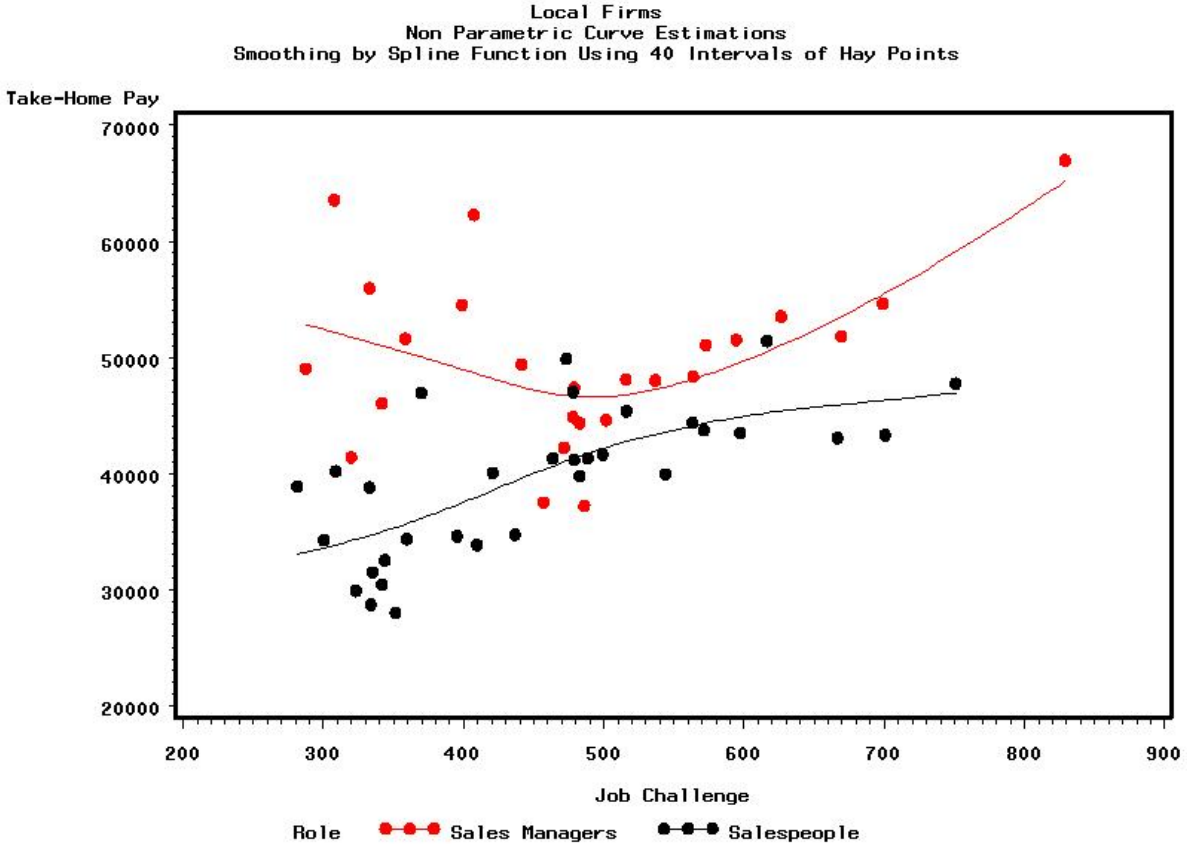

Local Firms
Non Parametric Curve Estimations
Smoothing by Spline Function Using 40 Intervals of Hay Points
Take-Home Pay
70000
60000
50000
40000
30000
20000
200
300
400
500
600
700
800
900
Job Challenge
Role
Sales Managers
Salespeople

Figure 3

International Firms
Quadratic Regressions Using 40 Intervals of Hay Points

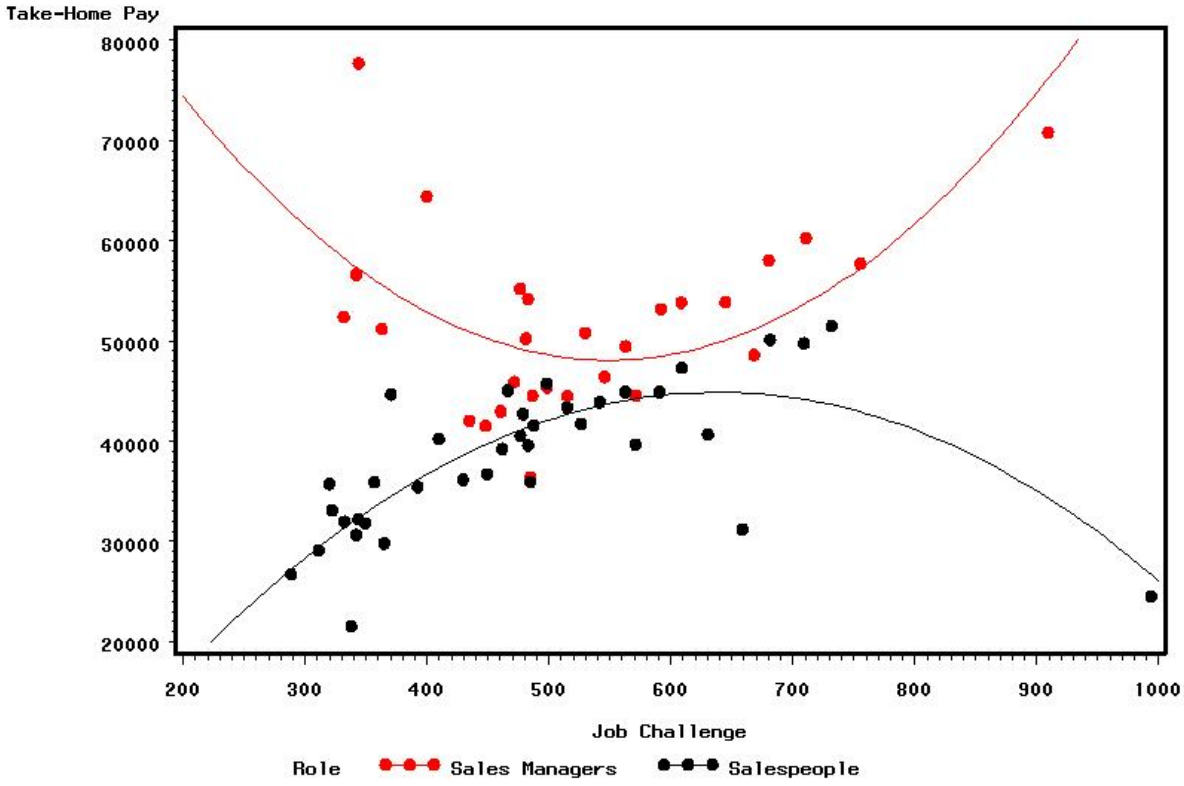


Figure 4

International Firms
Non Parametric Curve Estimations
Smoothing by Spline Function Using 40 Intervals of Hay Points

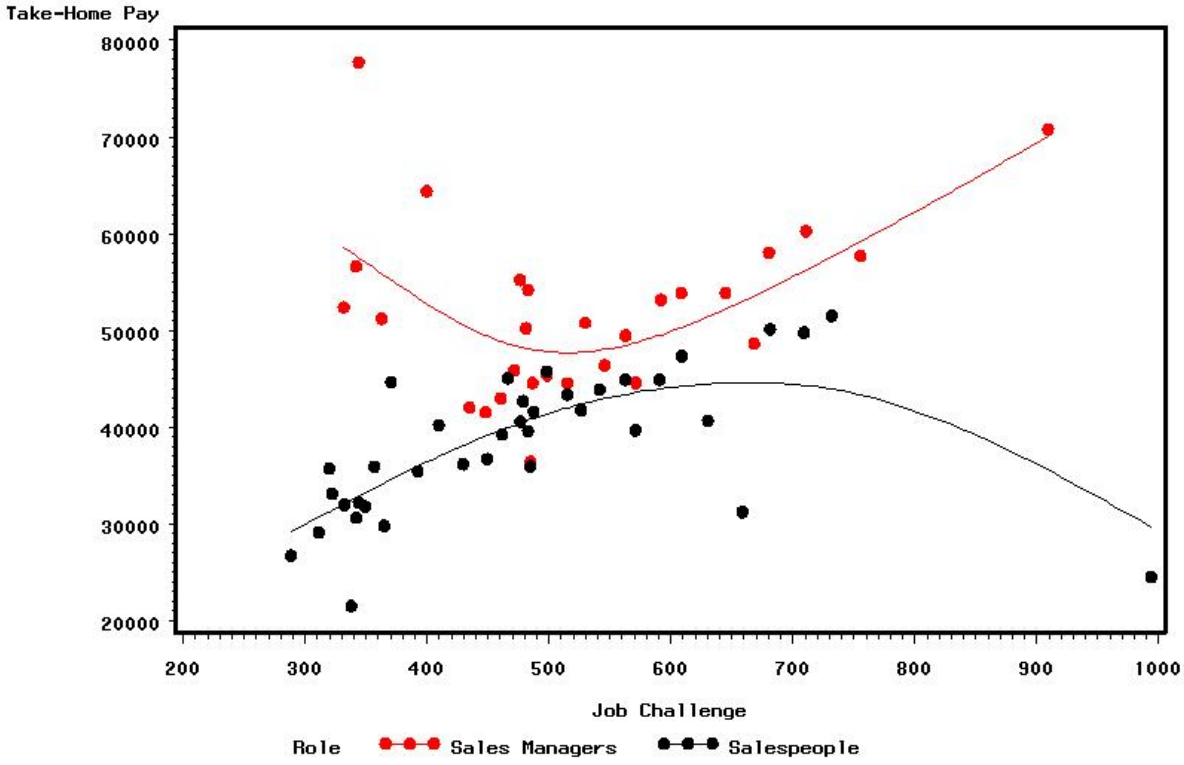


Figure 5

Local Firms
Quadratic Regressions Using 40 Intervals of Hay Points

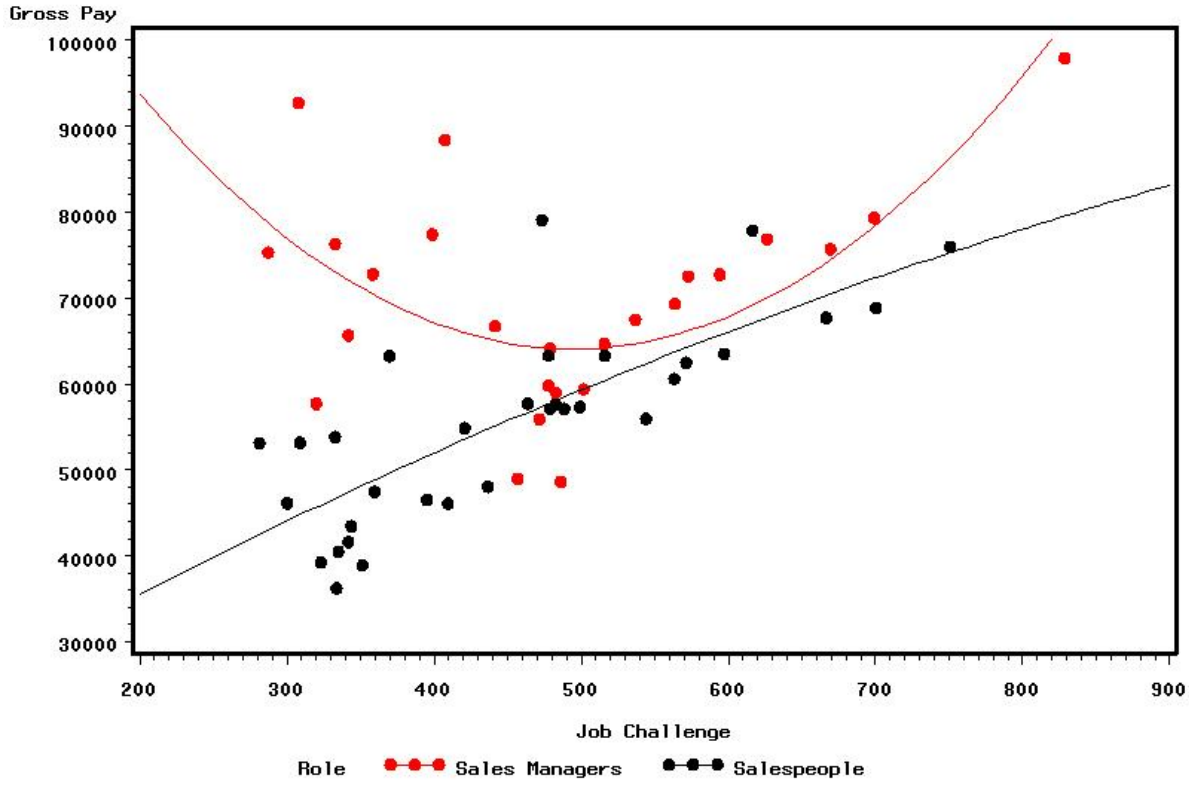


Figure 6

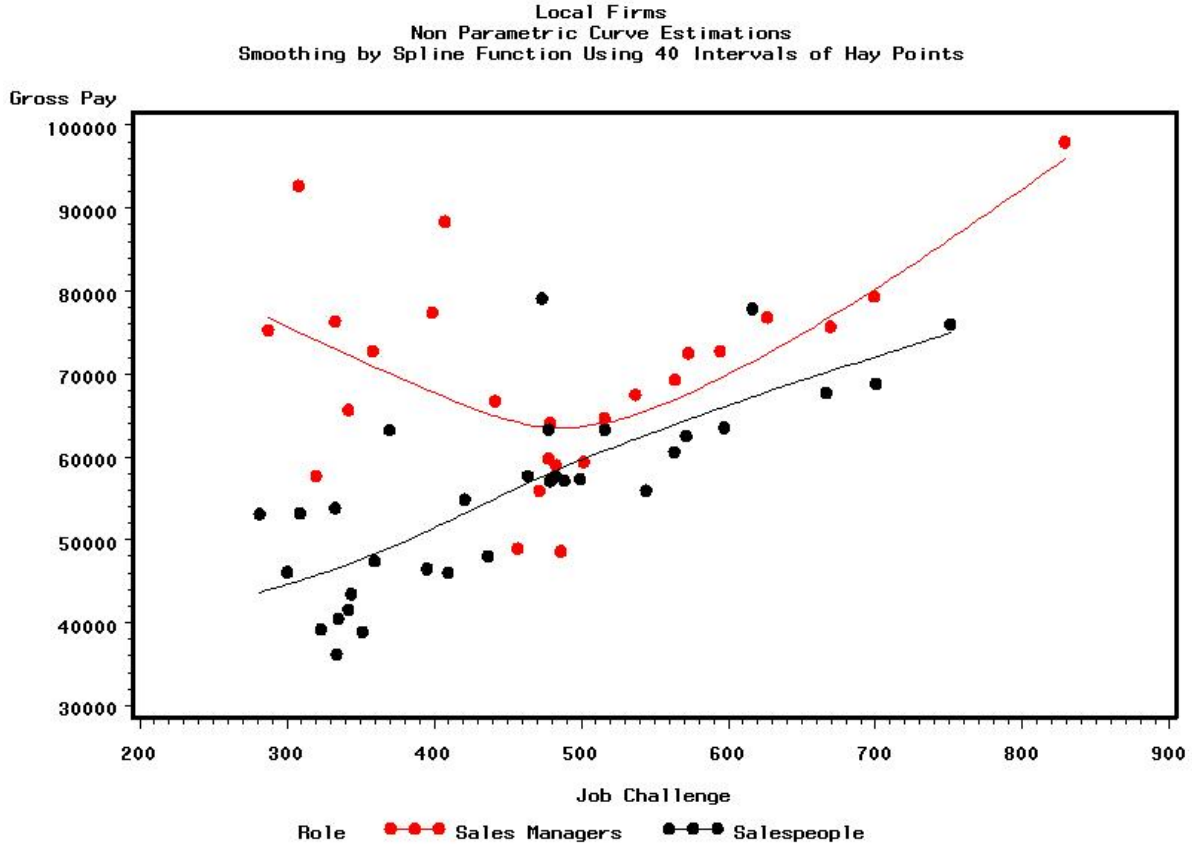

Local Firms
Non Parametric Curve Estimations
Smoothing by Spline Function Using 40 Intervals of Hay Points
Gross Pay
100000
90000
80000
70000
60000
50000
40000
30000
200
300
400
500
600
700
800
900
Job Challenge
Role
Sales Managers
Salespeople

Figure 7

International Firms
Quadratic Regressions Using 40 Intervals of Hay Points

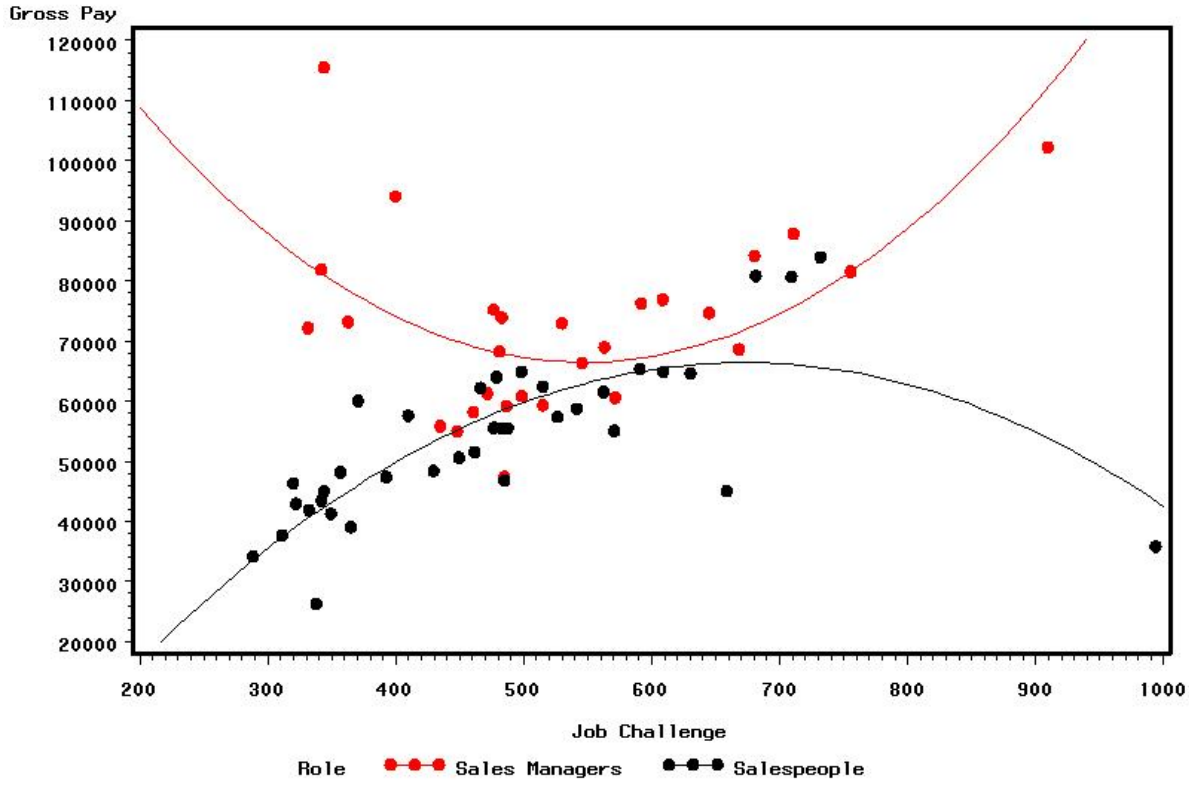


Figure 8

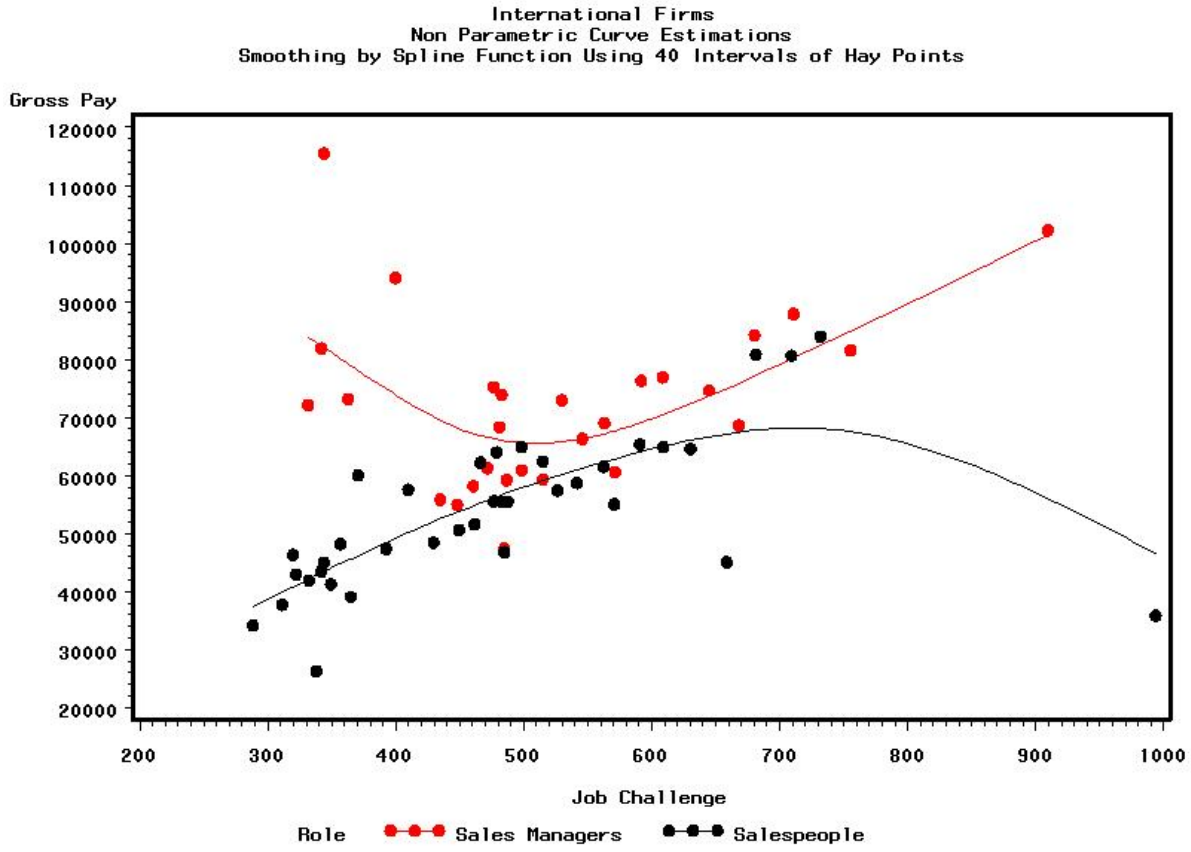
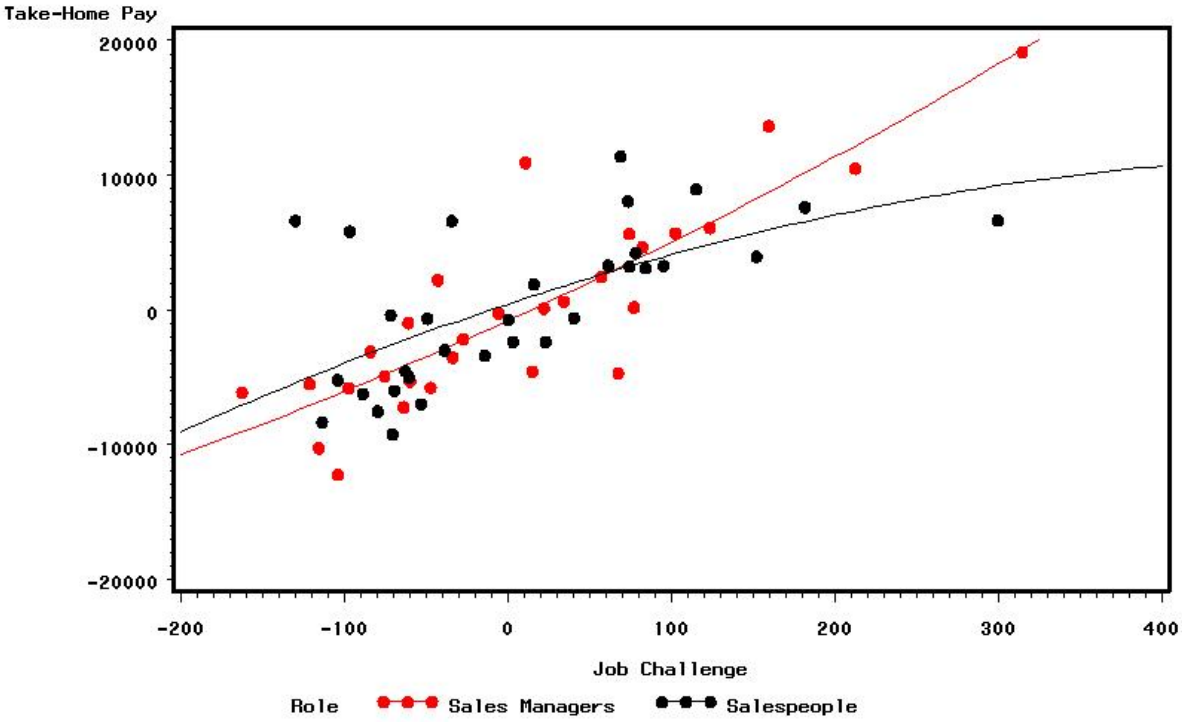

International Firms
Non Parametric Curve Estimations
Smoothing by Spline Function Using 40 Intervals of Hay Points
Gross Pay
120000
110000
100000
90000
80000
70000
60000
50000
40000
30000
20000
200
300
400
500
600
700
800
900
1000
Job Challenge
Role
Sales Managers
Salespeople

Figure 9

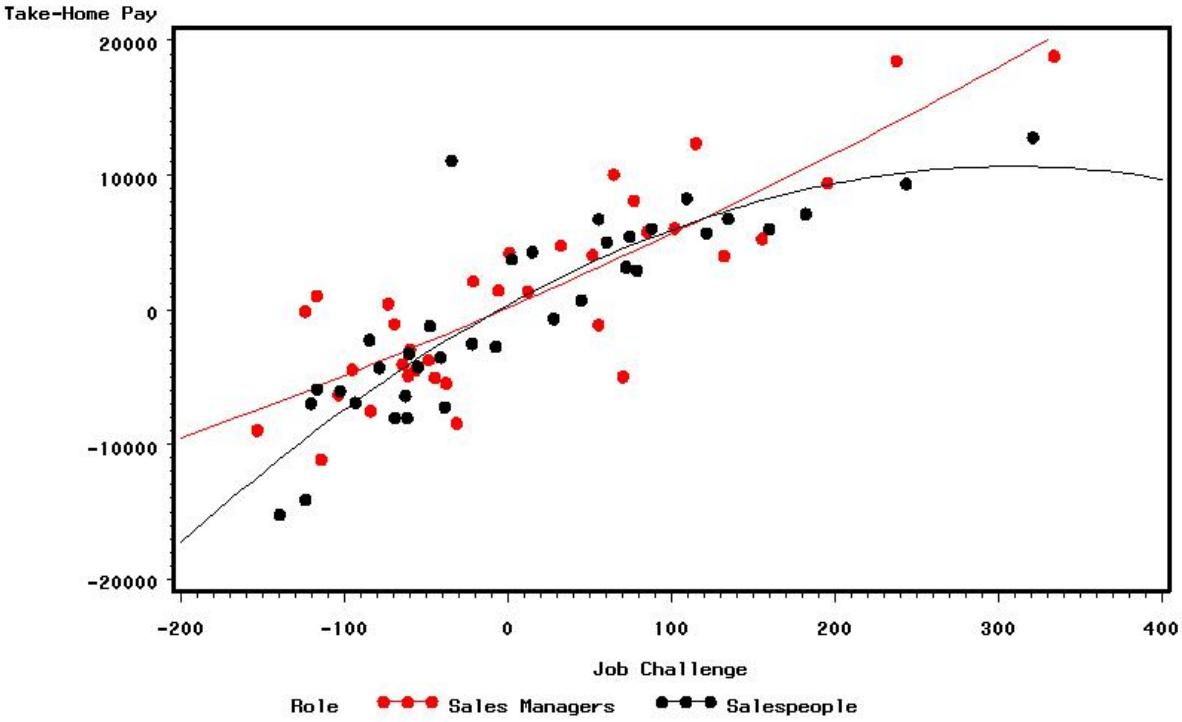
Local Firms
Quadratic Regressions Using 40 Intervals of Hay Points



Note: Take Home Pay (in €) is centred by industry
Note: Job Challenge (in Hay points) is centred by industry

Figure 10

International Firms
Quadratic Regressions Using 40 Intervals of Hay Points



Note: Take Home Pay (in €) is centred by industry
Note: Job Challenge (in Hay points) is centred by industry