Midland Railway

$$\log(St\ Pancras\ Booked\ Passengers) = \alpha + \beta \cdot \log(LL\ Midland) + \gamma \cdot \log(LL\ GNR) + \delta \cdot \log(PTM\ Midland)$$

Dependent Variable: LOG(PASSENGERS)
Method: Least Squares
Date: 11/29/11 Time: 11:56
Sample: 1876 1912
Included observations: 37

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-8.550641	2.159073	-3.960330	0.0004
LOG(LLMIDLAND)	1.333945	0.473992	2.814278	0.0082
LOG(LLGNR)	-1.892945	0.275105	-6.880808	0.0000
LOG(PTM)	1.487381	0.098615	15.08267	0.0000

R-squared	0.982812	Mean dependent var	13.17998
Adjusted R-squared	0.981250	S.D. dependent var	0.364237
S.E. of regression	0.049875	Akaike info criterion	-3.056779
Sum squared resid	0.082089	Schwarz criterion	-2.882626
Log likelihood	60.55041	F-statistic	628.9986
Durbin-Watson stat	1.260285	Prob(F-statistic)	0.000000

Great Western Railway (GWR)

$$log(GWR\,TotalWorking\,Expenditure) = \alpha + \beta \cdot log(PTM) + \gamma \cdot log(FTM) + \delta \cdot log(cpi1900)$$

(

Dependent Variable: LOG(TWE)
Method: Least Squares
Date: 11/22/11 Time: 16:29
Sample: 1861 1912
Included observations: 52

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.609579	0.183215	-14.24323	0.0000
LOG(PTM)	0.949608	0.027205	34.90627	0.0000
LOG(FTM)	0.129994	0.028346	4.585891	0.0000
LOG(CPI1900)	1.111429	0.125178	8.878811	0.0000

R-squared	0.995439	Mean dependent var	15.19504
Adjusted R-squared	0.995154	S.D. dependent var	0.590074
S.E. of regression	0.041077	Akaike info criterion	-3.472931
Sum squared resid	0.080992	Schwarz criterion	-3.322835
Log likelihood	94.29620	F-statistic	3492.025
Durbin-Watson stat	0.747255	Prob(F-statistic)	0.000000

Great Western Railway (GWR)

$$log(GWR\,TotalWorking\,Expenditure - Shipping) = \alpha + \beta \cdot log(PTM) + \gamma \cdot log(FTM) + \delta \cdot log(cpi1900)$$

(

Dependent Variable: LOG(TWE-SHIP)
Method: Least Squares
Date: 11/22/11 Time: 16:28
Sample(adjusted): 1868 1912
Included observations: 45 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-4.213007	0.392871	-10.72364	0.0000
LOG(PTM)	0.837045	0.030491	27.45179	0.0000
LOG(FTM)	0.337308	0.049310	6.840550	0.0000
LOG(CPI1900)	1.530686	0.123828	12.36135	0.0000

R-squared	0.995497	Mean dependent var	15.31516
Adjusted R-squared	0.995168	S.D. dependent var	0.447181
S.E. of regression	0.031086	Akaike info criterion	-4.019452
Sum squared resid	0.039619	Schwarz criterion	-3.858860
Log likelihood	94.43766	F-statistic	3021.469
Durbin-Watson stat	1.176339	Prob(F-statistic)	0.000000

London, Tilbury and Southend Railway (LTS)

$$log(LTSTotalWorkingExpenditure) = \alpha + \beta \cdot log(PTM) + \gamma \cdot log(FTM) + \delta \cdot log(cpi1900)$$

(

Dependent Variable: LOG(TWE-SHIP)
Method: Least Squares
Date: 11/22/11 Time: 16:46
Sample(adjusted): 1876 1911
Included observations: 36 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3.246065	0.367107	-8.842276	0.0000
LOG(PTM)	0.403191	0.104283	3.866296	0.0005
LOG(FTM)	0.806170	0.116747	6.905249	0.0000
LOG(CPI1900)	3.135618	0.386163	8.119929	0.0000

R-squared	0.982019	Mean dependent var	11.89337
Adjusted R-squared	0.980333	S.D. dependent var	0.624111
S.E. of regression	0.087525	Akaike info criterion	-1.929342
Sum squared resid	0.245141	Schwarz criterion	-1.753395
Log likelihood	38.72815	F-statistic	582.5383
Durbin-Watson stat	0.738642	Prob(F-statistic)	0.000000

London Tilbury & Southend Railway (LTS)

$$log(LTS\,Total\,Working\,Expenditure) = \alpha + \beta \cdot log(Train\,Miles) + \gamma \cdot log(Length\,of\,Line)$$

Dependent Variable: LOG(TWE1900)
Method: Least Squares
Date: 10/25/11 Time: 12:35
Sample(adjusted): 1885 1911
Included observations: 27 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-6.552159	0.813542	-8.053866	0.0000
LOG(TM)	1.112960	0.077415	14.37651	0.0000
LOG(LL)	0.726309	0.264524	2.745724	0.0113

R-squared	0.961019	Mean dependent var	12.22647
Adjusted R-squared	0.957770	S.D. dependent var	0.436634
S.E. of regression	0.089728	Akaike info criterion	-1.879631
Sum squared resid	0.193226	Schwarz criterion	-1.735649
Log likelihood	28.37502	F-statistic	295.8389
Durbin-Watson stat	0.649353	Prob(F-statistic)	0.000000

London, Tilbury & Southend Railway (LTS)

$$LTS\,Total Working\,Expenditure = \alpha + \beta \cdot LTS\,Passenger\,Train\,Miles + \gamma \cdot Length\,of\,Line$$

Dependent Variable: TWE1900
Method: Least Squares
Date: 10/25/11 Time: 11:58
Sample(adjusted): 1883 1911
Included observations: 29 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-82445.17	37804.39	-2.180836	0.0384
TM	0.173573	0.012523	13.86012	0.0000
LL	973.0514	638.6830	1.523528	0.1397

R-squared	0.941724	R-squared	0.941724
Adjusted R-squared	0.937241	Adjusted R-squared	0.937241
S.E. of regression	24157.25	S.E. of regression	24157.25
Sum squared resid	1.52E+10	Sum squared resid	1.52E+10
Log likelihood	-332.2437	Log likelihood	-332.2437
Durbin-Watson stat	0.514695	Durbin-Watson stat	0.514695

London & North Western Railway (LNWR)

$$log(LNWR\,Traffic\,Expenditure) = \alpha + \beta \cdot log(Train\,Miles) + \gamma \cdot log(Route\,length)$$

Dependent Variable: LOG(TRAFFICEXP1900)
Method: Least Squares
Date: 10/25/11 Time: 11:46
Sample: 1883 1912
Included observations: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-34.08370	2.748506	-12.40081	0.0000
LOG(TMILES)	1.109000	0.220068	5.039351	0.0000
LOG(ROUTE)	4.026248	0.740376	5.438111	0.0000

R-squared	0.950359	Mean dependent var	15.84314
Adjusted R-squared	0.946681	S.D. dependent var	0.217091
S.E. of regression	0.050128	Akaike info criterion	-3.053830
Sum squared resid	0.067846	Schwarz criterion	-2.913710
Log likelihood	48.80745	F-statistic	258.4501
Durbin-Watson stat	0.369035	Prob(F-statistic)	0.000000