Final Report - SCORE Project for Replication of a Research Claim from Kollmeyer (2009), from *American Journal of Sociology*

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1 Claim Summary

The claim selected for replication from Kollmeyer (2009) is that there is an indirect effect of the level of a northern, economically advanced country's imports from the South on de-industrialization that goes through national affluence. Specifically, North-South trade increases real per capita incomes of Northern countries and, in the process, indirectly promotes de-industrialization by heightening national affluence beyond levels that would prevail in the absence of global trade. The focal claim concerns the association between imports from the South and national affluence. This reflects the following statement from the paper's abstract: "The results indicate that each factor makes significant contributions to de-industrialization, and that global trade exerts both direct and indirect effects on employment patterns in economically advanced countries." The author tests the selected claim using two-way fixed-effects regression models and panel data on 18 Organization for Economic Cooperation and Development (OECD) countries from 1970 to 2003. The specification of the model can be gleaned from Figure 2, equations 1a - 1c, and Table 2, Model 4. The focal test result concerns the location of the estimated coefficient "Imports from the South" under the heading "Model 4". The dependent variable is "National Affluence". The result was a statistically significant estimated coefficient for "Imports from the South" under the heading "Model 4" ($b = 0.910$, $SE = 0.104$, $p < 0.001$).

2 Replication Criteria

Criteria for a successful replication attempt for the SCORE project is a statistically significant effect (alpha = .05, two tailed) in the same pattern as the original study on the focal hypothesis test (H*). For this study, this criteria is met by a positive and statistically significant (to the 5% level) association between national affluence "NAff" and imports from the south "IMS" as mentioned in section 17 of the pre-registration; pre-registration can be found by clicking HERE.

3 Replication Results

The original study collected data for "18 OECD countries from 1970 to 2003" (p. 1644) using OECD's STAN database. The replication data uses trade data from UN Comtrade from 1950 to 2011 for 33 OECD member countries (i.e., there are originally 37 OECD countries but following the original author, Chile, Colombia, Mexico and Turkey are considered "South" countries and hence, excluded from the list). The rest of the datasets required for replication (i.e., GDP, population, and unemployment) are from the same source used by the original authors. An additional dataset containing the years each OECD member country joined the OECD is taken from the OECD (variable: "year_ratified"). An additional variable has also been created to identify the original 18 countries that the original author used (variable: "oecd18"). The author defines the "Global North" as countries in Europe and North America but excluded Mexico and Turkey from this definition. They also moved Australia, New Zealand, Japan, Israel, and Korea from the "Global South" to the "Global North". The OECD member countries on top of the 18 that the original authors used, except for Chile and Colombia, are all European countries. Hence, there was no need to move them anywhere. The final replication dataset has all 33 OECD countries from 1950-2011.

3.1 Replication Results for Table 2

Figure 1 illustrates the replication results, taken directly from STATA, for model (4) in Table 2 of the original publication. In figure 1, note that IMS L1 represents the independent variable "Imports from the South", lagged by one period, EXS L1 represents the independent variable "Exports to the South", lagged by one period, and unemp represents the unem-

Cross-sectional time-series FGLS regression

Coefficients: **generalized least squares**
Panels: **heteroskedastic**
Correlation: **panel-specific AR(1)**

Estimated covariances	=	31	
Estimated autocorrelations	=	31	
Estimated coefficients	=	44	
Number of obs	=	713	
Number of groups	=	31	
Obs per group:			
min	=	8	
avg	=	23	
max	=	53	
Wald chi2(43)	=	30857.51	
Prob > chi2	=	0.0000	

NAff	Coefficient	Std. err.	z	P>|z|	[95% conf.	interval]
IMS						
L1.	406.2101	80.18865	5.07	0.000	249.0432	563.3769
EXS						
L1.	-174.9013	74.23744	-2.36	0.018	-320.404	-29.39855
unemp						
L1.	-341.8421	26.75106	-12.78	0.000	-394.2732	-289.411
DUM70to74	2401.378	747.3504	3.21	0.001	936.5979	3866.158
DUM75to79	4306.179	798.9212	5.39	0.000	2740.322	5872.035
DUM80to84	6764.258	821.3461	8.24	0.000	5154.449	8374.067
DUM85to89	9617.196	828.8434	11.60	0.000	7992.693	11241.7
DUM90to94	12100.92	822.8738	14.71	0.000	10488.12	13713.72
DUM95to99	15156.91	805.0067	18.83	0.000	13579.13	16734.7
DUM00to04	17680.34	804.4829	21.98	0.000	16103.58	19257.1
DUM05to09	19486.57	825.4304	23.61	0.000	17868.76	21104.38
DUM10to14	21242.31	833.0781	25.50	0.000	19609.51	22875.12
DUM15to18	22835.94	844.0635	27.05	0.000	21181.6	24490.27
_cons	22778.68	766.1889	29.73	0.000	21276.98	24280.38

Figure 1: Estimation output for the FGLS model. Information on the xtgls command used in STATA to perform the routine can be found by clicking HERE.

ployment rate. Those coefficients are fllowed by a list of time dummy variables and finally a constant term.

3.2 Assessment of Replication Results

Based on the replication of the claim (provided in figure 1) exceeding the criteria outlined in section 2, a successful replication attempt for this SCORE project **has been** met. Specifically, the replication results demonstrate a positive relationship between national affluence (Naff) and Imports from the South (IMS), that is statistically significant at the 5% level.

4 Deviations from Preregistration

The xtgls routine estimated in STATA has been augmented with the options "panels(hetero)" and "corr(psar1)" in order to control for serial autocorrelation in the residuals, spatial correlation, and groupwise heteroskedasticity. This resulted in an estimation routine closer to what the author outlined in the published article. Although more consistent with the text, this change did not alter the results of the replication, or the ultimate assessment of the replication claim.

5 Description of Materials Provided

The following is included in the OSF replication folder for this project:

- An R script file titled "kollmeyerscript.R" which creates the final data set used in the analysis. This script can be found by clicking HERE.
- The compiled final dataset used for the replication titled "finaldata_noNA.csv", which can be found by clicking HERE.
- The STATA .do file titled "KYMR.do", which runs the estimation to replicate the results of Model 4 in Table 2, which can be found by clicking HERE.

Remark 1. *All materials in this component will be made public.*

6 Citation

Official reference citation for Kollmeyer (2009) can be found below in the References section.

References

Kollmeyer C. 2009. Explaining deindustrialization: How affluence, productivity growth, and globalization diminish manufacturing employment. American Journal of Sociology **114**: 1644–1674.
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