



Do "Immigrants Increase Unemployment of US Citizens?" An Empirical Examination of Trump's Campaign Rhetoric



Why Study

- Specifically to analyze Trump's campaign rhetoric:
- Many different aspects for the argument for and against immigration into the US:
 - Negative views:**
 - Immigrants pose a risk to low-skilled natives workers' wages and employment.
 - Behavioral changes of natives including on taxation, interest rates, and wages which alter labor supply, human capital investment, and savings.
 - Immigrants could put pressure on government spending because they use up welfare.
 - Potential to cause unemployment and reduce the aggregate level of US output
 - Positive views:**
 - Immigrants could be compliments to our own native workforce and combining them would create a more productive society with innovation.
 - Immigration could increase native incomes because of their comparative advantages in manual-intensive tasks, while natives have comparative advantages in communication tasks (when immigrants take the manual intense jobs, natives are forced to put their skills to use and therefore earn higher wages).
 - Immigrants could fill our high skilled/highly educated workers gap
 - Immigrants can increase beneficial trade between their home and host
- Want to see the real facts, so we can have informed opinions and public policy

Data

- Annual immigration (IMM), Gross Domestic Product (GDP), Unemployed Persons (UNEP)
- Data goes back to 1870 and up until 2015 (146 years worth of data)

Table-6: VEC Granger Causality/Block Exogeneity Wald Tests

Dependent variable: D(LOG(UNEP))			
Excluded	Chi-sq	df	Prob.
D(LOG(IMMG))	12.62538	5	0.0272
D(LOG(GDP))	19.57614	5	0.0015
All	38.89005	10	0.000

Dependent variable: D(LOG(GDP))			
Excluded	Chi-sq	df	Prob.
D(LOG(IMMG))	11.231554	5	0.0016
D(LOG(UNEP))	7.495345	5	0.1863
All	13.41479	10	0.0424

Dependent variable: D(LOG(IMMG))			
Excluded	Chi-sq	df	Prob.
D(LOG(GDP))	7.486527	5	0.0467
D(LOG(UNEP))	1.194086	5	0.9454
All	12.76189	10	0.2373

FINAL RESULTS

I found 2 main things with my results:

- There exists a long run relationship between US GDP, Unemployment, and Immigration Inflows
- While we found bidirectional causality between GDP & Immigrant inflow, the relationship between immigration is unidirectional causality from immigration to unemployment
 - a. So, looking at a 1 time shock in immigration (a one time increase) reveals a rise in GDP levels and a fall in unemployment. This is contradictory to Trump's campaign rhetoric.

- Results considered preliminary because data on immigrants not broken down by:
 - Broad geographical region, skill level, specific countries of origin

University Honors Capstone - Anna Jensen

Table-1: Average Annual Values of Immigration and Economic Conditions in USA by Decades (1870-2015)

Decades	GDP (PPP, 2011 Prices, Millions)	Per capita Income (PPP, 2011 Prices)	Unemployed Persons (in 000)	Number of Immigrants
1870-1879	186,332.60	4,154.06	818.40	274,213.70
1880-1889	297,666.80	5,288.49	823.50	524,856.80
2000-2009	14,200,000.00	48,216.21	8,265.30	1,029,943.00
2010-2015	15,900,000.00	50,303.37	11,741.85	1,032,400.00

- Visible increasing trend in all variables of interest over time, except during the anomaly of the Great Depression

Table-2: Descriptive Statistics

	1870 - 2015		1870 - 1929		1951 - 2015	
	GDP (Millions, In 2011 PPP Prices)	UNEP (in 1000)	IMMG	UNEP (in 1000)	IMMG	IMMG
Mean	4,211,688	4,427.91	510,692.40	590,997	1,489.95	504,458.60
Median	2,074,701	2,925	401,660.50	500,447	1,205	439,730
Maximum	16,784,705	14,825	1,826,595	1,530,544	4,918	1,285,349
Minimum	157,539.40	437	23,068	157,539.40	437	110,618
Std. Dev.	4,814,165	3,592.34	358,499.50	347,106.50	907.33	293,335.60
Skewness	1.23	0.85	0.87	0.58	1.59	0.97
Kurtosis	3.25	2.76	3.38	2.16	6.07	3.16
Jarque-Bera Probability	37.35	17.91	19.4	5.15	49.59	9.66
Pairwise Correlation (Pearson)						
GDP	1					
UNEP	0.711**	1				
IMMG	0.588***	0.285**	1			
No. of Years	146	146	146	61	61	61

Table-4: Johansen Co-Integration Test

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized				
No. of CE(s)	Eigenvalue	Trace Statistic	Critical Value (5%)	Prob.**
None *	0.185739	36.3345	29.79707	0.0077
At most 1*	0.035882	17.979052	15.49471	0.04677
At most 2	0.021053	2.936266	3.841466	0.0866

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized				
No. of CE(s)	Eigenvalue	Max. Eigen Statistic	Critical Value (5%)	Prob.**
None *	0.185739	28.35544	21.13162	0.004
At most 1*	0.035882	18.042786	14.2646	0.0364
At most 2	0.021053	2.936266	3.841466	0.0866

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

$$\Delta GDP_t = \beta_0 + \sum_{i=1}^p \beta_{1i} \Delta GDP_{t-i} + \sum_{i=1}^p \beta_{2i} \Delta UNE_{t-i} + \sum_{i=1}^p \beta_{3i} \Delta IMM_{t-i} + \alpha_1 Z_{t-1} + \epsilon_{1t} \quad (6)$$

$$\Delta UNE_t = \varphi_0 + \sum_{i=1}^q \varphi_{1i} \Delta UNE_{t-i} + \sum_{i=1}^q \varphi_{2i} \Delta GDP_{t-i} + \sum_{i=1}^q \varphi_{3i} \Delta IMM_{t-i} + \lambda_1 Z_{t-1} + \epsilon_{2t} \quad (7)$$

$$\Delta IMM_t = \gamma_0 + \sum_{i=1}^r \gamma_{1i} \Delta IMM_{t-i} + \sum_{i=1}^r \gamma_{2i} \Delta GDP_{t-i} + \sum_{i=1}^r \gamma_{3i} \Delta UNE_{t-i} + \phi_1 Z_{t-1} + \epsilon_{3t} \quad (8)$$

Fig. 1.1: Economic Conditions and Immigration Patters in the U.S.A. (1870-2015)

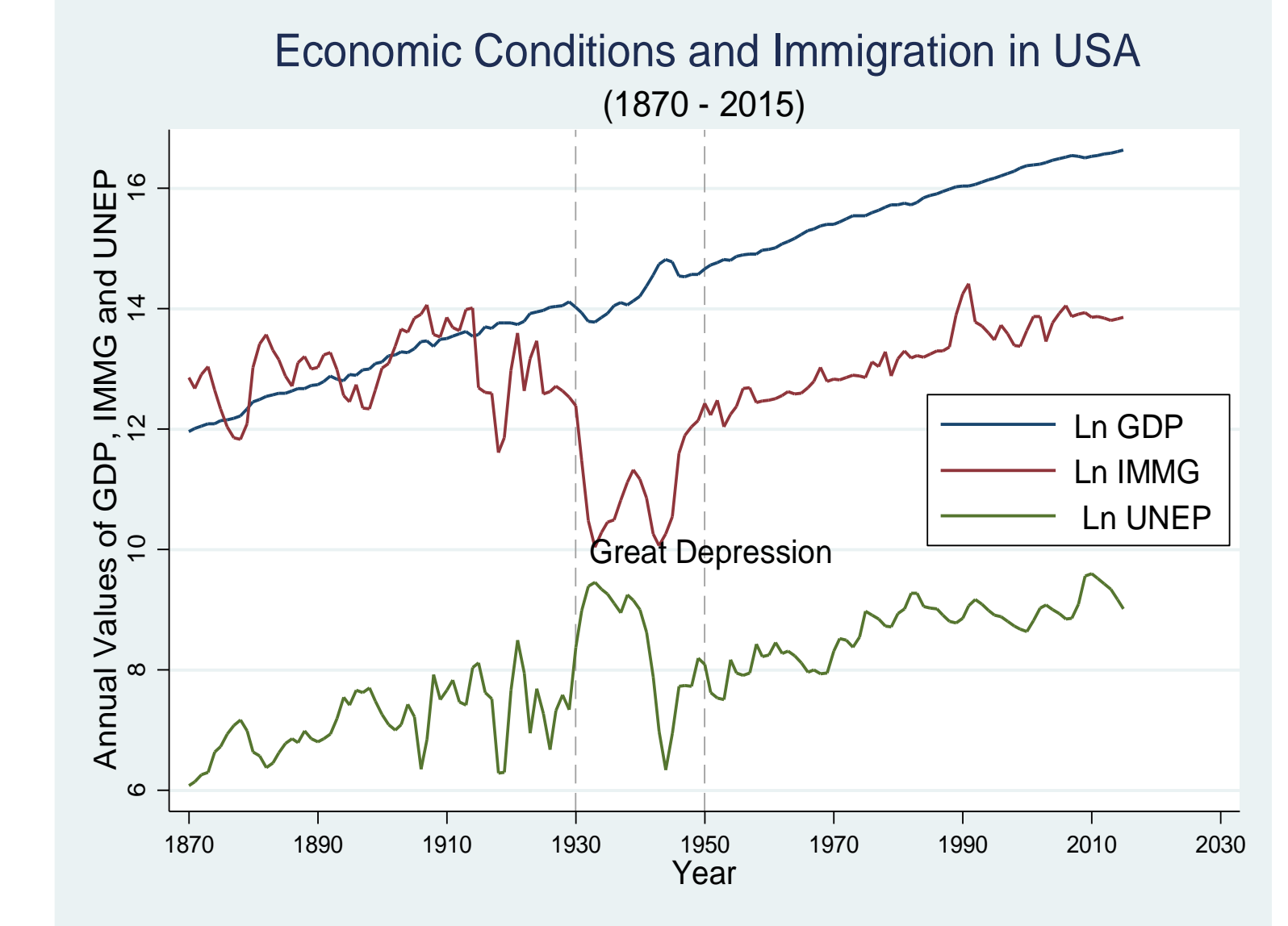
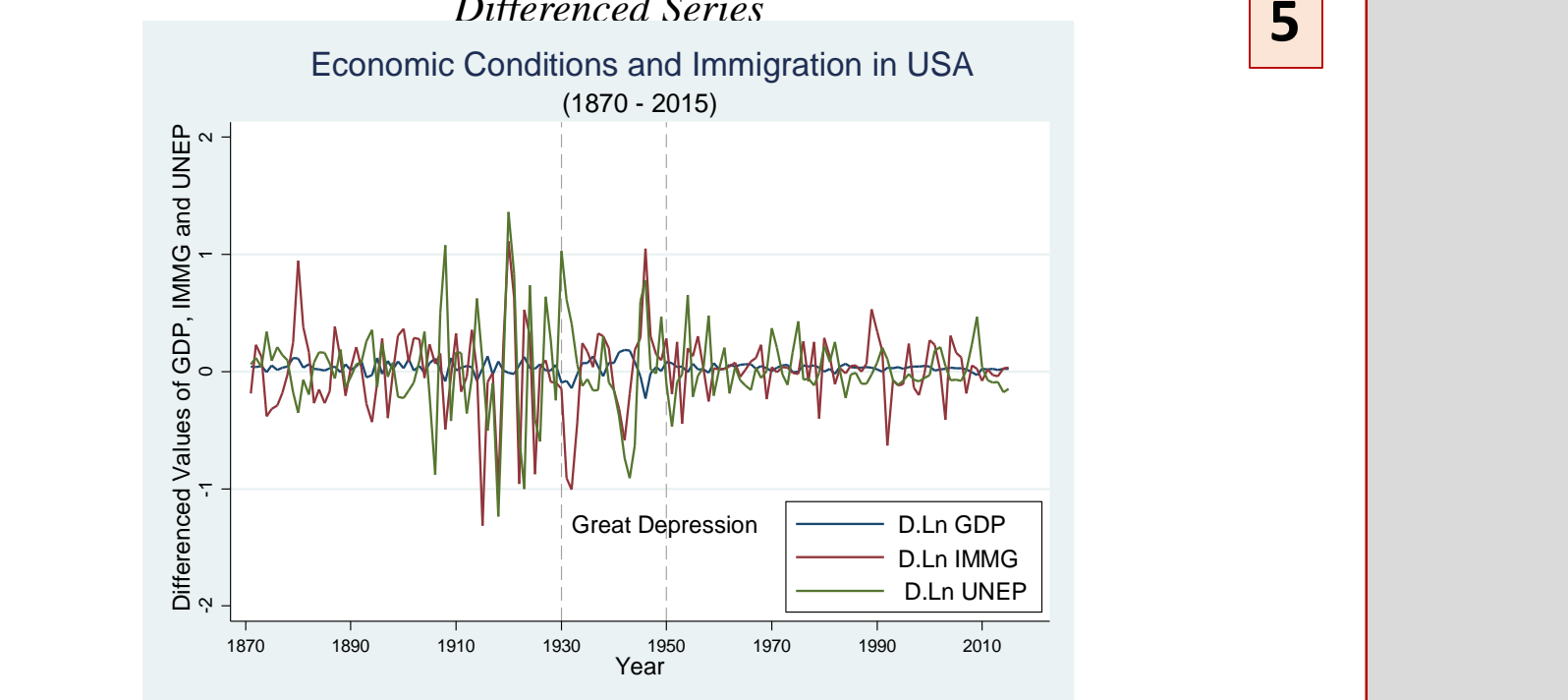


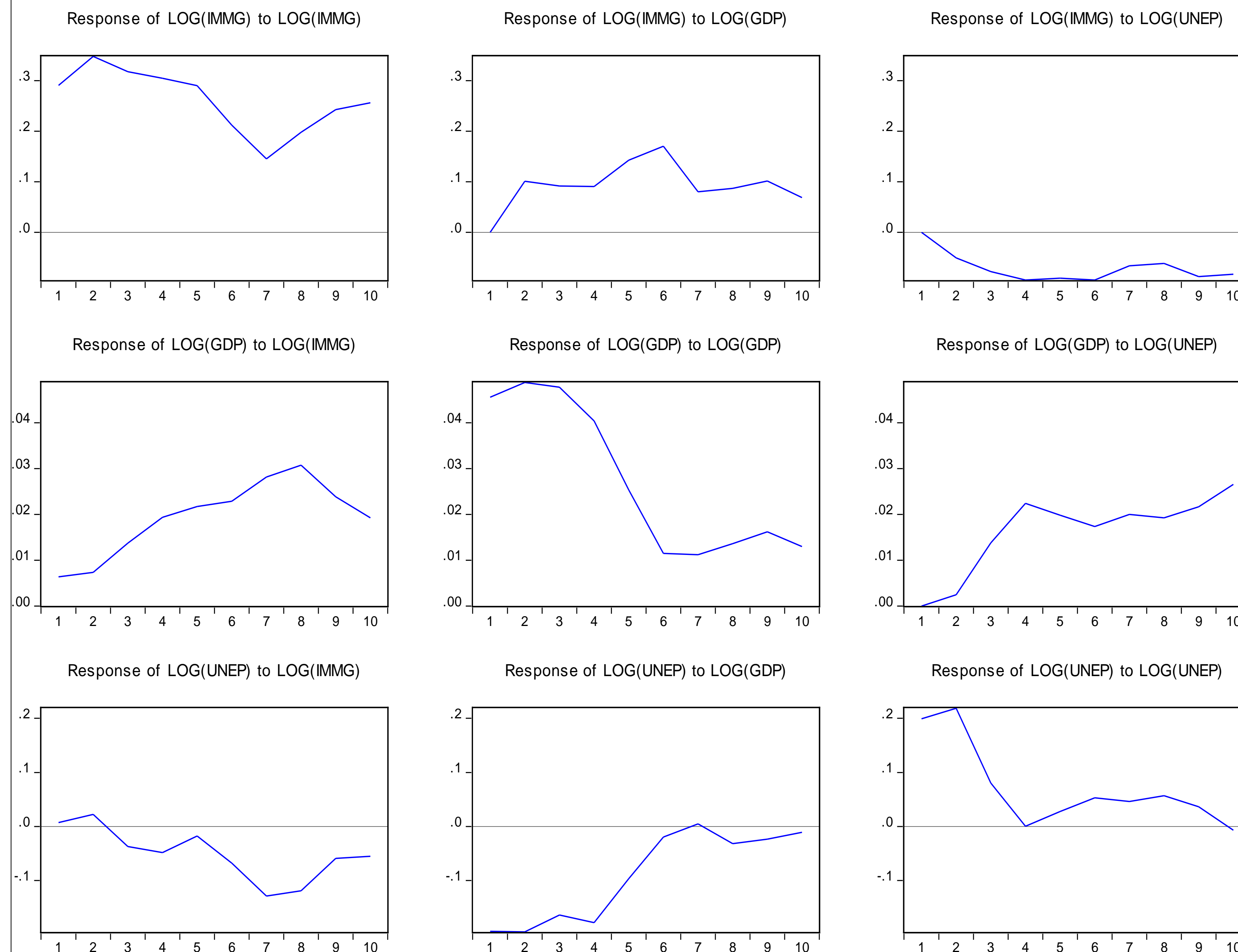
Table-3: Non-Stationarity Test Results (Null Hypothesis: the given variable is non-stationary (i.e., has a unit root))

Variables	ADF Test		ADF-GLS Test		Phillips-Perron test	
	SIC Lag	t-Stat	Critical Value (5%)	SIC Lag	t-Stat	Critical Value (5%)
Log Levels						
Ln(GDP)						
a) Intercept only	1	-0.937	-2.882	1	2.775	-1.943
b) Intercept and trend	1	-4.084***	-3.441	1	-2.493	-2.986
Ln(UNEP)						
a) Intercept only	2	-0.604	-1.943	2	-0.604	-1.943
b) Intercept and trend	3	-4.776***	-3.442	3	-2.114	-2.988
Ln(IMMG)						
a) Intercept only	0	-2.037	-2.881	0	-2.058	-2.581
b) Intercept and trend	0	-2.231	-3.441	0	-2.169	-2.985
First Difference						
D Ln(GDP)						
a) Intercept only	0	-9.178***	-2.882	0	-9.013***	-1.943
b) Intercept and trend	0	-9.182***	-3.441	0	-9.234***	-2.986
D Ln(UNEP)						
a) Intercept only	1	-10.908***	-2.882	1	-10.857***	-1.943
b) Intercept and trend	1	-10.879***	-3.442	1	-10.903	-2.987
D Ln(IMMG)						
a) Intercept only	1	-7.661***	-2.882	0	-8.865***	-1.943
b) Intercept and trend	4	-7.648***	-3.442	0	-9.744***	-2.986

Fig. 2: Economic Conditions and Immigration Patters in the U.S.A. (1870-2015)



Response to CholeskyOne S.D. (d.f. adjusted) Innovations



References

Baethan, Asbok Deo, and Subrajit Guha. 2004. Global Linkages of Subnational Regions: Coastal Exports of International Networks. *Contemporary Economic Policy* 22 (2): 225-236.

Blanes-Cristobal, Jose Vicente. 2008. Characteristics of Immigrants and Bilateral Trade. *Revista de Economía Aplicada* XVI (48): 133-159.

Borjas, George J. 2003. The Labor Demand Curves Is Downward Sloping: Reexamining the Impact of Immigration on the Labor Market. *The Quarterly Journal of Economics* 118 (4): 1335-1374.

Borjas, George J. 2005. The Labor Market Impact of High Skill Immigration. *American Economic Review* 95 (2): 56-60.

Borjas, George J. 2006. Native Internal Migration and the Labor Market Impact of Immigration. *The Journal of Human Resources* 41(2): 221-258.

Borjas, George J., Jeffrey Grogger, and Gordon H. Hanson. 2012. On estimating elasticities of substitution. *Journal of the European Economic Association* 10: 198-210.

Caeti, David. 2009. Immigration and inequality. *American Economic Review* 99: 1-21.

Chojnicki, Xavier, Frederic Docquier, and Lionel Ragot. 2011. Should the US Have Locked Heaven's Door? Reassessing the Benefits of Postwar Immigration. *Journal of Population Economics* 24 (1): 317-359.

Cortes, Patricia. The Effect of Low-Skilled Immigration on U.S. Prices: Evidence from CPI Data. 2008. *Journal of Political Economy* 116 (3): 381-422.

D'Amari, Francesco, and Giovanni Peri. 2014. Immigration, Jobs, and Employment Protection: Evidence from Europe Before and During the Great Recession. *Journal of the European Economic Association* 12 (2): 432-464.

Docquier, Frederic, Caglar Ozden, and Giovanni Peri. 2013. The Labour Market Effect of Immigration and Emigration in OECD Countries. *The Economic Journal* 124 (579): 1106-1145.

Docquier, Frederic, Giovanni Peri, and Iole Raysson. 2014. *International Migration Review* 9 (1): 837-899.

Enchautegui, Maria E. 1995. Effects of Immigrants on the 1980-1990 U.S. Wage Experience. *Contemporary Economic Policy* 13 (3): 20-38.

Franzoni, Chiara, Giuseppe Scellato, and Paula Stephan. 2013. The Mover's Advantage: The Superior Performance of Migrant Scientists. *Economic Letters* 122 (1): 89-93.

Girma, Sourafel, and Zhibao Yu. 2002. The Link Between Immigration and Trade: Evidence from the United Kingdom. *Review of World Economics* 139 (1): 115-130.

Gold, David M. 1994. Immigrant Links to Home Country: Empirical Implications for U.S. Bilateral Trade Flows. *The Review of Economics and Statistics* 76 (2): 302-316.

Grossman, Alan H. 1982. The substitutability of natives and immigrants in production. *Review of Economics and Statistics* 64: 596-603.

Hant, Jennifer, and Marjolaine Guethier-Louiselle. 2010. How Much Does Immigration Boost Innovation? *American Economic Review* 100 (2): 31-56.

Islam, Asadul. 2007. Immigration Unemployment Relationship: The Evidence from Canada. *Australian Economic Papers* 46 (1): 52-66.

Islam, Faridul, and Saheer Khan. 2015. The Long Run Impact of Immigration on Labor Market in an Advanced Economy: Evidence from US Data. *International Journal of Social Economics* 42 (4): 356-367.

Mayda, Anna Maria. 2010. International Migration: A Panel Data Analysis of the Determinants of Bilateral Flows. *Journal of Population Economics* 23 (4): 1249-1274.

Ottaviano, Gianmarco I. P., and Giovanni Peri. 2012. Rethinking the effect of immigration on wages. *Journal of the European Economic Association* 10 (4): 152-197.

Ottaviano, Gianmarco I. P., and Giovanni Peri. 2006. The Economic Value of Cultural Diversity: Evidence from US Cities. *Journal of Economic Geography* 6 (1): 9-44.

Ottaviano, Gianmarco I. P., Giovanni Peri, and Greg C. Wright. 2010. Immigration, Offshoring, and American Jobs. *American Economic Review* 103 (5): 1925-1959.

Ortega, Francesc, and Giovanni Peri. 2013. The Effect of Income and Immigration Policies on International Migration. *Migration Studies* 1 (1): 47-74.

Ortega, Francesc, and Giovanni Peri. 2014. Openness and Income: The Roles of Trade and Migration. *Journal of International Economics* 92 (2): 231-251.

Peri, Giovanni. 2012. The Effect of Immigration on Productivity: Evidence from U.S. States. *The Review of Economics and Statistics* 94 (1): 348-358.

Peri, Giovanni, and Chad Sparber. 2009. Task Specialization, Immigration, and Wages. *American Economic Journal: Applied Economics* 1 (3): 135-169.

Peri, Giovanni, Kevin Shih, and Chad Sparber. 2015. STEM Workers, H-1B Visas, and Productivity in US Cities. *Journal of Labor Economics* 33 (1): S223-S235.

Qubria, M.G., and Faridul Islam. 2010. Immigration and Long-Run Economic Outcome: A Note. *Economic Bulletin* 30 (4): 2567-2575.

Saiz, Albert. 2006. Immigration and Housing Rents in American Cities. *Journal of Urban Economics* 61 (2): 345-371.

Sanderom, Matthew R. 2014. Networks of Capital, Networks for Migration: Political-Economic Integration and the changing geography of Mexico-US Migration. *Global Networks* 14 (1): 23-43.

White, Roger. 2010. *Migration and International Trade: The US Experience since 1945*. Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.