POLAND: RECESSION MODEL OR IDIOSYNCRATIC TRADITIONALIST?

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Paper to be presented at the 21st Annual Conference of the Network of Institutes and Schools of Public Administration in Central and Eastern Europe (NISPAcee), General Session, on May 16-18, 2013, Belgrade, Serbia,

ABSTRACT.

Poland demonstrated a solid financial performance during the 2007-12 recession. The paper will examine the financial performance using a model consisting of risk, uncertainty, incentives and security, in order to pursue the research question; what explains the Polish 2007-12 positive financial performance during a period causing its European neighbors to suffer significant down-side effects? Should the model prove illuminating, it will be tested against other European countries during 2014, in order to examine its wider applicability. The model will be operationalized as follows: **risk:** reliance on European parent banks against recalling their liabilities, particularly foreign currency; **uncertainty**: vulnerability to foreign spillovers from escalating financial and sovereign stress in the euro area; incentives: likelihood of continuing adverse external financial shocks; **incentives:** fiscal consolidation, economic growth vs. austerity (spending patterns), unemployment reduction; **security:** capital and liquidity support as well as approach to non-performing loans. Further measures will be utilized by the Global Competitiveness Report for 2011-12, that ranks the world on 12 pillars of competitiveness including institutions, infrastructure, macro economic environment, health and primary education, higher education and training, labor market efficiency, technological readiness, market size, business sophistocation and innovation.

Poland has survived the 2007-2008 recession in more positive economic condition than the rest of the European Union. This paper addresses the probable causation for its performance, seemingly, extraordinary, exceeding that of Germany, let alone the remaining euro zone members. Despite this phenomenon, the proof has been inchoate in explaining its success. Several theories abound: sociology; averse-risk behavior; IMF's standby loan (not used); proximity to Germany, its leading trading partner; resilience of its central bank; appetite for consumption among its 38 million population; creating confidence among risk averse investors; and others.

The paper examines each of the speculative causes and fails to be convinced by any one cause. Analysis of evidence, data and other empirical measures, do not suggest why this country should exceed growth rates and other indicators such as debt encumbrances suffered by the rest of the euro zone. Accordingly, it turns to Rajan to explore his theories of risk adversity. While somewhat compelling, he offers no model for testing Poland's success. The paper constructs one. Should this model have greater explanatory power than simple risk adversity, it will be tested against the Visegrad Four in 2014, largely since each of these was within the Soviet bloc as was Poland. That should eliminate the likelihood that the post-Soviet Visegrad Four all share a certain capitalistic skepticism toward path dependency. Preliminary, limited appraisal of Czech Republic, Hungary and Slovakia shows sufficient disparity such that this plausibility is not contained within post-soviet predilections.

Stricter comparisons will need to wait until 2014. Poland's indicators seem closer to Turkey than any of the Visegrad Four. Turkey cannot be included since it is not a member of the EU, the euro zone or the former soviet bloc. That would complicate the analysis. We conclude that Poland simply did most things right, despite suffering from a continuing high unemployment rate. There is no "low hanging fruit" that explains Poland's behavior. While this finding is not robust, it will be further tested in 2014 against the Visegrad Four since those countries had been embedded in the same Soviet bloc milieu as Poland. We have not entirely eliminated the path dependency possibility. (i.e., were Soviet bloc countries likely to be cautious about markets vs. government [control] regulation?).

THEORY.

Rajan[1] observes that risk is related to return on investment. However, one of his main explanations refers to tail risk. Tail risk refers to either side of a normal curve that restricts probability to a very low figure. Tail risk was particularly important in financial risk leading up to the recession. While this might apply to economic and financial considerations of the Polish economy, we are more concerned with risk in general Why did Poland emerge successfully? Not necessarily because they worried about tail risk. Of course, if they did, they would have been quite risk averse. However tail risk referred more to the disastrous result of failing to protect against derivatives , particularly mortgaged based derivatives in the debt markets. Poland might well have not submerged in the debt markets, particularly derivatives. In fact,

[1] Rajan, R.G. (2010), *Fault Lines: How Hidden Fractures Still Threaten The World Economy,* Princeton University Press, ISBN 978-0-691-14683-6).

they did not. Accordingly, we need a more general risk model that might have been followed by Poland directed toward financial prudence.

We construct a model using **RISK/UNCERTAINTY/ INCENTIVES/ SECURITY.** Rajan deals with these phenomena, for example, risk involves **risk and return**. The work of a banker or investor is to take the 'appropriate risk' considering the rate of return on that level of risk. We will operationalize Poland's risk around measures such as Poland's borrowing from foreign banks, in hard currency (e.g. Swiss Francs), since should foreign banks recall their capital (as they did) they will require payment in that same currency. While Poland remains vulnerable to this requirement, it has so far survived passably.

As to **uncertainty,** we apprise the vulnerability to foreign spillovers from escalating financial and sovereign stress in the euro area (of which Poland is not a member) since the euro zone was experiencing substantial hard currency demands of its own. As Rajan observes, many firms calculated uncertainty on the basis of regulatory compliance rather than *management control.*[2] Concerning **incentives**, we might evaluate the likelihood of continuing adverse external financial shocks, i.e. would the euro zone continue recessionary needs for hard currency? Says Rajan, will limited risk by the financial entity lead to profit without serious downside penalty should losses be incurred.[3] Finally, what **security** exists such as capital and liquidity support as well as approach to non-performing loans. While securitization remained the same as a concept, competition tended to cause an increase in risk accepted during the financial crisis for example, consolidated debt obligations.[4]

As a final group of measures, we extract from the Global Competitiveness Report for 2011-12,[5] that ranks the world on 12 pillars of competitiveness including institutions, infrastructure, macroeconomic environment, health and primary education, higher education and training, labor market efficiency, technological readiness, market size, and business sophistication and innovation. In this way we hope to embrace some if not all of the aforementioned causative factors mentioned in the literature.

ISSUES.

Intellectual capital is discounted as uncompetitive compared with other European countries (EU 27). [6] This analysis is based upon factors such as new patents per million residents or share of export of medium and high-tech products in total export. The author refers to the potential

[2] Ibid., p. 140.
[3] Ibid, p. 139.
[4] Ibid, p. 2.
[5] World Economic Forum, *The Global Competitiveness Report: 2011-2012,* Geneva, ISBN 13-978-92-95044-74-6.
[6] Wildowicz-Giegiel, A. (2011), "The Relationship Between Intellectual Capital and Innovativeness of Polish Economy," *Journal of US-China Public Administration* 8, 11, 1298-1307. ISSSN 1548-6591, November.

path dependency of "cultural relics of the previous system." While this may well be true, it is not necessarily related to risk-adversity or resilience in responding to the recession period. To some extent, this finding suggests the carryover of Soviet reticence and mistrust of society. If that is true, other countries in Visegrad Four or Former Soviet Union (FSU) may reflect the same recalcitrance. Poland, however, has bested such countries with the exception of Russia and its natural resource trade.

An assessment of the **pharmaceutical market in Poland**[7] argues that further deregulation of the health care system is needed in order to enhance health care revenues, i.e., expanding the private sector. While this may be suggestive of a centralized ministerial control of health care, the jump to financial prudence coupled with rising GDP rates suggests the government has managed to create balance between austerity and growth. Naturally, this transition period suggests temptation to privatize the heath sector despite the middle and lower class shock likelihood. This is likely in time. Yet, this financial reluctance, requiring subsidy does not help us locate risk-adversity in capital markets, particularly the borrowing markets.

Ben Slay[8] brings us closer to the target in asserting **five factors contributing to financial success:** ethnic homogeneity; relatively developed private sector (but see pharmaceuticals); legacies of earlier reforms; geographic proximity to the West; and, strong elite and popular commitment to reform. While this may be true, depending upon measurement of companion activity in the Visegrad Four, Hungary now seems to be going "back to the future," yet Havel and the Czech Republic, as well as a reformed Robert Fico in Slovakia, seem to share at least modest amounts of reform. Again, we are searching for risk adversity or risk confidence based upon security. Certainly proximity to the West refers to Visegrad Four as well NATO and EU). Poland, however, has the disquieting presence of its eastern neighbor, Russia.

The *Economist* magazine offers **three remedial actions** somewhat closer to financial causation: the zloty was never pegged to the euro; the Vienna Initiative; and, "robust" countercyclical fiscal policy.[9] By not pegging to the euro, the Polish Central Bank could interfere in the currency market to protect the zloty; the Vienna Initiative: "The Initiative specifically sought to limit the negative fallout from nation-based uncoordinated policy responses to the global crisis and to avoid a massive and sudden deleveraging by cross-border bank groups in emerging Europe."[10] Thus, the Polish Central Bank intervened as necessary assuming such intervention

[7] Willert, P.L. (2007), "Assessment of the Pharmaceutical Market in Poland After Accession to the European Union," *The European Journal of Health Economics,* 8, 4, December, pp. 347-357.
[8] In Milanovic, B. (1997), "The Polish Economy: Crisis, Reform, and Transformation," Review, *The Journal of Developing Areas,* 31, 2, Winter, 251-54.
[9] *Economist* (2012), "Learning from Abroad: (Don't Forget Poland), http://www.economist.com/blogs/freeexchange/2012/12/learning-abroad/print.
[10] http://vienna.initiative.com. (2009).

would have limits. Nevertheless, the IMF and World Bank stated that Poland's institutions were "relatively unfriendly to creditors.'[11]

Poland's trade growth **expanded** during 2000-2012, "**almost tenfold**." [12] Except for surpluses in 2012, however, trade balance has been negative since January 2011. Its range of trade showed a low of (-)1721 EUR Million in July of 2008 and high 609 EUR Million in October of 2012.[13] Poland's i**mport** sources (2011) have been Germany, 28.2%; Russia, 12.4%; The Netherlands, 5.8%; Italy, 5.2%; its export sources were (2011) Germany, 26.6%; UK, 6.6%; Italy, 6.5%; Czech Republic, 6.4%, France, 6.3%.[14] Thus, trade, particularly with Germany, has strengthened the economy. Some 80% of trade is within Europe (including Russia).[15]

While there are additional proposed causative factors, one further possibility is the receipt by Poland of 1.39 trillion euros in **infrastructure funds** just in 2010.[16] These funds plus additional investments in the highway system and Warsaw subway system may have added 0.5 to 1 percent to the Poland's GDP growth per year during the recession.[17]

EVIDENCE/DATA.

We move to the **Global Competitiveness "Report for 2011-12.[18]** We see from Appendix A, that Poland in its Global Competitiveness Index shows a GDP of 468.5 US$billions; GDP per capita (US$) of 12,300; for a population of 38.0 mln people. It then ranks Poland for the 12 pillars of our operational measures mentioned on page 2 of our paper. While these rankings are instructive, we need to go to Appendix B, to see how Poland ranks in the world. This is done for each of our pillars. We do not wish to show all pillars since this would require an additional 12 appendices. Yet, by selecting certain pillars, we can possibly infer some ranking comparison of use.

For GDP, Poland is 20th in the world, (Appendix B). It is three slots below Turkey and favorably located above Visegrad Four (Czech Republic, 48), Hungary (57) and Slovakia (62). Naturally Poland has a larger population. Thus, we move to Appendix A1, at which point the Visegrad

[11] *Economist* op. cit.
[12] *Trading* Economics (2013), http://www.tradingeconomics.com/poland/ba;amce-of-trade, April.
[13] Ibid.
[14] Atradius (2013), "Summary of Country Report Poland," April, http://global .atradius.com/creditmanagagementknpwledge/Poland-overview.html.
[15] Stelmach, B. (2012), "The East European Miracle: How Did Poland Avoid The Global Recession?" in *International Business Times,* September 29.
[16] Ibid.
[17] Ibid.
[18] World Economic Forum (2011), *The Global competitiveness Report, 2011-2012*, World Economic Forum, Geneva, Switzerland, Centre for Global Competitiveness and Performance, ISBN-13-97892-95044-74-6.

Four evens out in per capita income (Czech Republic, 39, Slovakia (41), and Hungary (46, one spot above Poland (47). These figures are for 2010. Yet, if we divide the GDP by the population of each of the V-4[19], we get almost the same GDP per capita as the Competitiveness Report. This method of determining GDP per capita, while often used, does not include any other income earned elsewhere. For example, the Poles have earned significant income outside Poland. Polish doctors, for example, may work all week in Sweden and fly home on weekends. Are they reporting Swedish income? Not easy to calculate. These are not remissions sent home (the Central Bank might have some kind of data), they are simply bringing it home (hard to imagine it would be left in Sweden). Thus, we have learned over time that in eastern bloc countries, consumption expenditures may exceed income earned. Russia is, perhaps, the largest example of this. Reporting income is not the same as GDP or GDP per capita if it is not recorded. Most evaluations of the Polish economy contend that during the recession, Poles continued to consume. Where did they get the money? They are last in the Visegrad Four (per capita). A counterfactual might be that they are stocking up in case the economy deteriorates. If the spending pattern is the same as prior to the recession, that counterfactual won't work.

We continue with the 12 pillars: next, Institutions: Poland ranks 52nd among 142 countries. This variable provides values for property rights, intellectual property protection, diversion (corruption) of public funds; public trust of politicians; irregular payments and bribes (undocumented payments by firms); judicial independence (for some reason, Slovakia ranks 116 as opposed to Hungary at 64); favoritism in decisions of government officials; wastefulness of public spending (Poland at 76, well above remaining V-4); burden of government regulation (the entire V-4 ranks low), and remaining indicators (all measures will be listed in Appendix D). Thus, with the question of how Poland can have the lowest per capita income among the V-4, while seemingly having the most successful economic economic strategies (except its continuing unemployment) remains.

We move quickly to the pillar on **Financial Market Development** assuming that this may contribute to Poland's economic success. Poland ranks 34th among 142 countries. This places Poland well above the rest of the V-4. Ranking for flexibility of wage determination places Hungary at 41, Poland at 47, Czech Republic at 61 and Slovakia at 77; thus the V-4 is not uniform. Rigidity of employment places Czech Republic well above the rest of V-4. We move to Hiring and firing practices (measures "impeded by regulations vs. flexibly determined by employers). Hungary ranks 50, Poland ranks 114, followed by Slovakia and Czech Republic (116,

[19] The paper uses V-4 and Visegrad Four interchangeably.

119). Thus, our search regarding Poland places it substantially worse than Hungary, but virtually the same as Slovakia and Czech Republic. As to Brain Drain ("do the best and brightest leave the country?") Czech Republic is at 79, Poland at 96, Slovakia at 111 and Hungary at 121. The lowest ranks are given for "there are many opportunities for talented people within the country." Thus, V-4 has a problem with Poland not as attractive as Czech Republic but better than the other two.

With respect to female participation in the labor force, the V-4 are bunched in ranks 58 (Poland) to Czech Republic at 68. With respect to pay and productivity (a low rank would indicate that pay is positively related to productivity, Slovakia becomes the superpower ranked 14, Czech Republic is at 31, Poland is at 45 and Hungary is at 58. We conclude that whatever is driving the Poles, it does not leap out among Competitveness data. To some extent the V-4 tends toward convergence. Finally, regarding innovation, (to what extent is technology coming exclusively from licensing or imitating foreign companies vs. conducting formal research and pioneering own products and processes) the V-4 vary: Czech republic is ranked at 26 (right behind Canada), Hungary is ranked 41, Poland is at 49 and Slovakia is at 84. Thus, the Czechs are in good company and the rest of V-4 seems not good nor bad. Slovakia is an outlier located among developing countries at 59% within 142 countries. We turn now to some aggregate data.

GINI COEFFICIENT. Poland's gini is 31.1. This varies little from the rest of the Visegrad Four and very little from the EU 15 and EU 12, 30.8 and 30.7 respectively.[20] Data are for 2011. Thus, dispersion of income is quite equal.

While the Competitive Report provides substantial data, very little suggests en outlier for Poland. In some cases, Poland lies at the top of V-4, on other cases, at the bottom. Its average is more or less in the middle. Yet much of the data are related to the **production** economy rather than the **finance economy**. It is the finance economy that has won the plaudits. Naturally, the two economies are interrelated, at least, loosely. Supply and demand influence both. Yet demand is largely determined by disposable income, availability of financing, profit margins, assets and other fungible or convertible funding. One key to demand is willingness to commit funds for consumption/investment. So far, we have not discovered a Polish propensity to consume. If such exists, it would be related to the cost of money (currency evaluation), borrowing costs (interest rates), prices and a reasonable hedge against financial insecurity (social safety net). For the data so far included, Poland seems not dissimilar for V-4. We have

[20] http://epp.eurostats.ec.,europa.eu/tgm/printTSable.do?stab=table&plugin=1&language=en&pcode=...

not compared it with Western Europe but have included three members not in the euro zone and one that is (Slovakia) . Few differences yet seem to have appeared.

We turn now to **interest rates.** Keynesian theory would counsel quantitative easing. Yet interest rates are already low. Assumedly, demand should be stimulated. It is not defunct in Poland. Yet with a continuing unemployment rate of 13% before, during and after the recession peak (2008), it seems to resemble the Japanese disease: low or negative interest rates and no demand. Yet what if low demand is a global phenomenon? (it is). Few countries, if any, are self- supporting. They must trade. Poland does and particularly trades with Germany and Russia (gas). Still, without world demand, traditional trading partners are also exposed to low demand (including Germany's propensity to trade with Poland).

Perhaps, no one has solved the demand problem. Commodities have declined as production responds to low demand. Job potential seems limited to automobiles and social services, particularly health care and housing. Of course, austerity has limited demand as sovereigns have reduced market exchange (layoffs). Thus, households and small/medium business find limits on financing and credit. Currently, the American housing industry is recovering and debt is once again being securitized. Yet a double edged sword is appearing: quantitative easing has been backed at very low interest rates rather than stimulating demand. Part-time employment does not embrace sufficient income beyond sustainability.

In prior recessions, low interest rates would have generated demand. Yet a certain **shock impact** seems to have created **uncertainty** (part of our model). How has Poland circumvented this? (if it has). Can a 13% unemployment rate suggest that the economy is not employing Polish workers on a regular basis? If so, there **is a stagnant pool** of **unemployment.** This is the U.S. phenomenon. Certain jobs have disappeared. If so, have work conditions changed? This remains for contemplation as **unanswered.**

Other European countries have the same condition. Each, in its own way, has traded off **austerity vs. growth.** Growth has leveled or declined. Austerity and contraction have prevailed**.** Even Germany has gone to *kurz arbeit*[21] to head off unemployment. Its unemployment rate is ½ that of Poland. *Mittelstand*[22] survives having financed itself out of its own margins with quality goods. Emerging economies have a middle income trap and cannot

[21] Part time work.
[22] Medium size German firms typically privately owned.

compete with high technology products. Theoretically this should lead to a need for high technology import. Yet China seems to prefer joint FDI with technology firms such as in Germany. The goal is to receive transferred technology. This could mean mutual benefit. Europe's comparative advantage is in high technology. At the same time, emerging markets are competing among themselves for low value added goods.

Low interest rates can cause bubbles.[23] Inflation rates used to be of major concern; now it is deflation. This is a low level equilibrium trap. Poland's social safety net provides protection. But, its work force has an employment gap as does most of Europe There is a standoff between investment money vs. risk and return on investment (our model). Investors are interested in the short term at safe risk levels of return. Investor shock is high. The Cyprus phenomenon has continued the shock quotient.

If we return to **security**, Poland has been backed by an IMF loan not yet used. Further, the **rating agencies** recently upgraded Poland to A+.[24] This upgrading, despite low interest rates, values certainty and raises security (our model). Poland knowingly or unknowingly has adjusted the monetary policy to investor predilections. Nationally, its foreign denominated loans may have created a risk/adversity but neither the IMF nor the rating agencies were deterred. Unlike the UK, Poland has double the unemployment rate. In that sense, Poland seems identified with austerity. Yet the GDP has slowly increased while the population has not grown fast. Either the low per capita income is misleading (dividing population into GDP to get a per capita figure) or certain income (Polish doctors in Sweden) has not been recorded, or the preference has been for income equality in the face of low demand. Fortunately, for Poland, its output has met Germany's standard as to mid-level value added products.

Poland received a second flexible Credit Line (standby loan) from the International Monetary Fund.[25] The IMF made notice of Poland's private consumption growth, sustainable external position and well-capitalized banking sector.[26] Poland's financial characteristics have not changed appreciably. This standby loan that Poland has not used provides it with security against serious financial/economic downside risks. Said the IMF, the loan would "…play an

[23] *Economist* (2013), "Six Years of Low Interest Rates in Search of Some Growth," April 8, pp. 24-26.
[24] Japan Credit Rating Agency, Ltd (JCR) (2013), "JCR Upgraded Ratings on Poland from a-/A (FC/LLC) sto A/A,+" March 1, news Release, http://www..jcr.co.jp.
[25] International Monetary Fund (2009), "IMF Executive Board Approves US$20.58 Billion Arrangement for Poland Under the Flexible Credit LIne," May 6, http://www.imf.org/external/np/sec/pr/2009/pre09153.htm.
[26] Ibid.

important role in supporting the authorities' policy response, boosting market confidence, and placing Poland in a better position to manage adverse developments."[27]

The IMF's Country Report No. 13/21 in January 2013,[28] reaffirmed Poland's consistent performance: "…the Government has a strong record of meeting its obligations to the Fund….(and) has a deep commitment to macroeconomic stability and prudent fiscal policies. The Fund, however did remark that the labor market has "worsened and inflation has declined." The former arrangement was replaced by a new FCL arrangement with a proposed access of SDR 22billion, about 34 billion USD.[29]

DISCUSSION.

Our theoretical model seems to be holding up despite its inability to pinpoint Poland's uniqueness in occupying a leading role in coping with and emerging from the recent recession. Yet, despite presenting 12 variables from the Competitiveness Report, there is very little to show for the financial/economic uniqueness of Poland. Compared to the rest of V-4, Poland ranks 20th in GDP on the Competitiveness Report[30] We are left with two positives and one negative: the two positives are the IMF standby loan and the second is the Ratings upgrade of Poland to A+. The negative is the continuing unemployment rate of 13%. Despite other aggregate figures (gini, interest, GDP, etc.) there is hardly a robust difference among Poland and the Visegrad Four. In observing the more general aggregate figures see(APPENDIX C and D),we see a similar pattern of convergence among the V-4.[31] Nevertheless, Hungary is an outlier: (APPENDIX B) its sovereign rating is BB+ and its ratio of gross outstanding Sovereign Credit Default Swaps to Government Debt is approximately 73% (APPENDIX B). This substantially differs than ratios for Czech and Slovak Republics as well as Poland, the latter upgraded recently, supra, to A+. These three members of V-4 cluster around ratio of 18% of Sovereign Credit Defaults Swaps to Government Debt (2011).[32]

The IMF projects Poland's GDP as follows for 2012-2015: TABLE 1.

	2012	2013	2014	2015
GDP	2.2	1.7	2.3	3.0
Domestic	0.0	1.2	2.1	2.9

[27] Ibid.
[28] International Monetary Fund (2013), "IMF Country Report No. 13/21, Arrangement Under the Flexible Credit Line and Cancellation of the Current Arrangement" January 3.
[29] Ibid.
[30] See p. 5 of this paper, supra. Czech Republic, 48; Hungary, 57 and Slovakia, 62.
[31] International Monetary Fund (2013), "Global Financial Stability Report: Old Risks, New Challenges," April, chapter 2, p. 20, http://www.imf.org/external/pubs/ft/gfsr/2013/01/pdf/trext.pdf.

demand				
Private Consumption	0.7	0.6	2.1	2.5
Public consumption	0.0	0.8	0.7	1.8
Domestic fixed investment	0.0	0.2	3.1	4.7
Output gap	-0.3	-1.0	-0.7	-0.3

Source: IMF Country Report No. 13/21.

Thus, despite Poland's gradual emergence from recession, the growth projection is slightly encouraging. This accommodates internal/external income on a net basis.

Employment figures are not particularly reassuring.[33] Having dipped following the 2008 peak, the recovery occurred from 2009 to 2011 and then dropped again to barely 0.5 (year on year % changes). Reductions to unemployment seem uncertain. Eurostat is showing no change in harmonized unemployment % (seasonally adjusted):

Data from March 2012-February 2012:[34]

Poland, range is from 10.0 (Mar 2012) to 10.6 (Feb 2013)
Hungary 11.1 to 11.2
Czech Republic from 6.9-7.2
Slovakia from 13.6 to 14.6

Slovakia then is the outlier; Poland is more toward the middle.

Summarizing Poland's accommodation to our model:

RISK/UNCERTAINTY/INCENTIVES/SECURITY, we have surveyed various data sources in attempting to find a fit. While there are data that support the model, the test would present itself in differentiating differences between Poland and its fellow members in the Visegrad Four. With a few exceptions: IMF standby loan; a Sovereign Ratings upgrade; a somewhat healthy growth in GDP; and yet, with a continuing unemployment problem that places Poland in the middle among Czech Republic, Slovakia and Hungary, the scorecard seems still open. These are preliminary comparisons in the V-4 since further research will be needed to look more closely at the other members. We have still not eliminated the path dependency possibility that the V-4 did not plunge into huge holdings of securitized debt issues nor derivatives since it was still cautious about market ramifications.. Poland did engage in loans

[33] IMF Country Report 13/21, op. cit., p. 7.
[34] http://epp.eurostat.ec.europa.eu/tgm/printTable.do?tab=table&plugin=1&language=en&opcode=teilm020.

written in foreign currency, e.g. Swiss Francs that leave it with a downside risk. The IMF seems supportive that Poland can withstand a huge recall of these loans in view of its Standby Loan and reserves. The zloty seems to have survived without critical damage assumedly thanks to its Central Bank interventions.

CONCLUSION.

The topic will be pursued in 2014.by looking more closely at the entire V-4 while, at the same time, evaluating any data that might alter the balance of the V-4 one year later. There is one further research topic that might bear fruit: to what extent has Poland steered a favorable course of austerity vs. growth in adopting a strategy toward a maximum benefit or payoff of discretionary and non-discretionary funds. If so, what is the ratio between the two: what portion should go toward growth and what portion should go toward austerity? Neither politicians nor economists are in agreement.

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http://epp.eurostat.ec.europa.eu/tgm/printTable.do?tab=table&plugin=1&plugin=1&language=en&opcode-teilm020.

APPENDICES:

APPENDIX A: GROSS DOMESTIC PRODUCT in billions of current US dollars, 2010

Rank	**Country**	**Value**
20	Poland	468.5
46	Czech Republic	192.2
57	Hungary	129.0
62	Slovakia	87.5

Source: International Monetary Fund, World Economic Report, 2011-2012

APPENDIX A1: GROSS DOMESTIC PRODUCT PER CAPITA in current US dollars; 2010

Rank	**Country**	**Value**
39	Czech Republic	18,288
41	Slovakia	16,104
46	Hungary	12,879
47	Poland	12,200

Source: Global Competitiveness Report 2011-2012, World Economic Forum

APPENDIX B: COMPETITIVENESS IN WORLD

Rank	Country
20	Poland
48	Czech Republic
57	Hungary
62	Slovakia

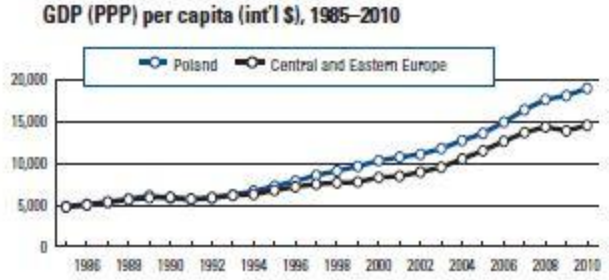
Source: International Monetary Fund, World Economic Outlook Database, April 2011

APPENDICES C & D:

Poland

Key indicators, 2010

Population (millions)	38.0
GDP (US$ billions)	468.5
GDP per capita (US$)	12,300
GDP (PPP) as share (%) of world total	0.97

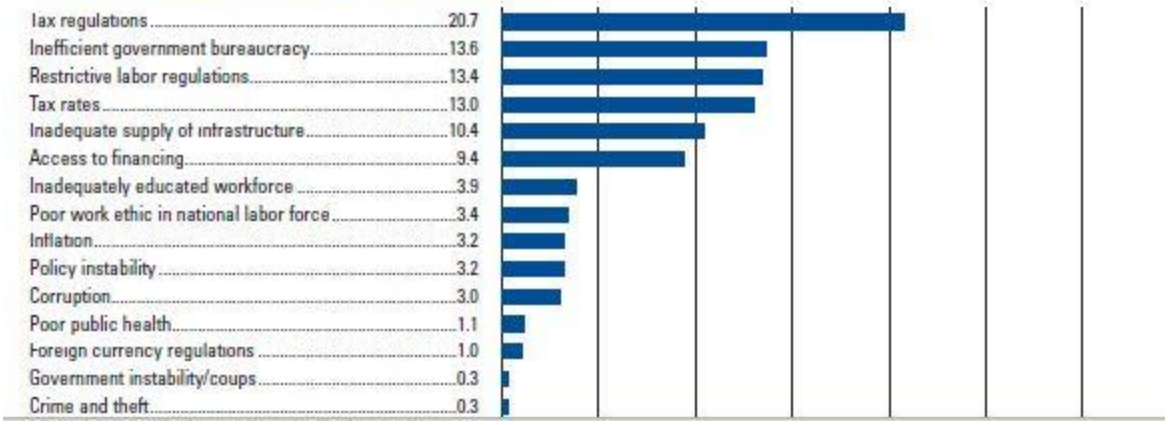


Global Competitiveness Index

	Rank (out of 142)	Score (1–7)
GCI 2011–2012	**41**	**4.5**
GCI 2010–2011 (out of 139)	39	4.5
GCI 2009–2010 (out of 133)	46	4.3
Basic requirements (31.7%)	**56**	**4.7**
Institutions	52	4.2
Infrastructure	74	3.9
Macroeconomic environment	74	4.7
Health and primary education	40	6.1
Efficiency enhancers (50.0%)	**30**	**4.6**
Higher education and training	31	4.9
Goods market efficiency	52	4.4
Labor market efficiency	58	4.5
Financial market development	34	4.6
Technological readiness	48	4.2
Market size	20	5.1
Innovation and sophistication factors (18.3%)	**57**	**3.6**
Business sophistication	60	4.1
Innovation	58	3.2

Stage of development

The most problematic factors for doing business



Poland

The Global Competitiveness Index in detail

	INDICATOR	VALUE	RANK/142
	1st pillar: Institutions		
1.01	Property rights	4.5	54
1.02	Intellectual property protection	3.7	61
1.03	Diversion of public funds	4.1	44
1.04	Public trust of politicians	2.5	76
1.05	Irregular payments and bribes	4.9	**39**
1.06	Judicial independence	4.3	53
1.07	Favoritism in decisions of government officials	3.3	52
1.08	Wastefulness of government spending	3.0	76
1.09	Burden of government regulation	2.6	124
1.10	Efficiency of legal framework in settling disputes	3.2	97
1.11	Efficiency of legal framework in challenging regs.	3.3	83
1.12	Transparency of government policymaking	4.0	93
1.13	Business costs of terrorism	6.0	43
1.14	Business costs of crime and violence	5.5	**37**
1.15	Organized crime	5.7	**40**
1.16	Reliability of police services	4.4	63
1.17	Ethical behavior of firms	4.1	53
1.18	Strength of auditing and reporting standards	5.2	41
1.19	Efficacy of corporate boards	4.4	79
1.20	Protection of minority shareholders' interests	4.1	79
1.21	Strength of investor protection, 0–10 (best)*	6.0	**36**
	2nd pillar: Infrastructure		
2.01	Quality of overall infrastructure	3.8	87
2.02	Quality of roads	2.3	134
2.03	Quality of railroad infrastructure	2.5	74
2.04	Quality of port infrastructure	3.4	107
2.05	Quality of air transport infrastructure	3.7	111
2.06	Available airline seat kms/week, millions*	274.0	52
2.07	Quality of electricity supply	5.3	56
2.08	Fixed telephone lines/100 pop.*	24.7	48
2.09	Mobile telephone subscriptions/100 pop.*	120.2	42
	3rd pillar: Macroeconomic environment		
3.01	Government budget balance, % GDP*	-7.9	128
3.02	Gross national savings, % GDP*	17.3	88
3.03	Inflation, annual % change*	2.6	1
3.04	Interest rate spread, %*	2.7	**22**
3.05	General government debt, % GDP*	55.7	102
3.06	Country credit rating, 0–100 (best)*	71.7	**37**
	4th pillar: Health and primary education		
4.01	Business impact of malaria	N/Appl.	**1**
4.02	Malaria cases/100,000 pop.*	(NE)	**1**
4.03	Business impact of tuberculosis	6.0	**39**
4.04	Tuberculosis incidence/100,000 pop.*	24.0	51
4.05	Business impact of HIV/AIDS	6.1	**28**
4.06	HIV prevalence, % adult pop.*	0.1	**21**
4.07	Infant mortality, deaths/1,000 live births*	5.6	**36**
4.08	Life expectancy, years*	75.7	48
4.09	Quality of primary education	4.4	47
4.10	Primary education enrollment, net %*	95.2	46
	5th pillar: Higher education and training		
5.01	Secondary education enrollment, gross %*	99.6	**28**
5.02	Tertiary education enrollment, gross %*	69.4	**19**
5.03	Quality of the educational system	3.7	71
5.04	Quality of math and science education	4.3	52
5.05	Quality of management schools	4.0	78
5.06	Internet access in schools	4.7	48
5.07	Availability of research and training services	5.0	**27**
5.08	Extent of staff training	4.1	55

	INDICATOR	VALUE	RANK/142
	6th pillar: Goods market efficiency		
6.01	Intensity of local competition	5.3	**38**
6.02	Extent of market dominance	4.3	**36**
6.03	Effectiveness of anti-monopoly policy	4.3	49
6.04	Extent and effect of taxation	3.1	107
6.05	Total tax rate, % profits*	42.3	82
6.06	No. procedures to start a business*	6	**34**
6.07	No. days to start a business*	32	103
6.08	Agricultural policy costs	3.7	85
6.09	Prevalence of trade barriers	4.6	60
6.10	Trade tariffs, % duty*	0.8	**4**
6.11	Prevalence of foreign ownership	4.5	85
6.12	Business impact of rules on FDI	4.1	102
6.13	Burden of customs procedures	4.4	48
6.14	Imports as a percentage of GDP*	42.9	72
6.15	Degree of customer orientation	4.8	53
6.16	Buyer sophistication	3.5	68
	7th pillar: Labor market efficiency		
7.01	Cooperation in labor-employer relations	4.0	100
7.02	Flexibility of wage determination	5.3	47
7.03	Rigidity of employment index, 0–100 (worst)*	25.0	68
7.04	Hiring and firing practices	3.3	114
7.05	Redundancy costs, weeks of salary*	13	**21**
7.06	Pay and productivity	4.2	45
7.07	Reliance on professional management	4.3	65
7.08	Brain drain	3.0	96
7.09	Women in labor force, ratio to men*	0.81	58
	8th pillar: Financial market development		
8.01	Availability of financial services	4.8	54
8.02	Affordability of financial services	4.3	57
8.03	Financing through local equity market	3.7	55
8.04	Ease of access to loans	2.7	71
8.05	Venture capital availability	2.4	79
8.06	Soundness of banks	5.4	60
8.07	Regulation of securities exchanges	5.0	**30**
8.08	Legal rights index, 0–10 (best)*	9.0	**8**
	9th pillar: Technological readiness		
9.01	Availability of latest technologies	4.6	88
9.02	Firm-level technology absorption	4.3	100
9.03	FDI and technology transfer	5.0	**37**
9.04	Internet users/100 pop.*	62.3	**37**
9.05	Broadband Internet subscriptions/100 pop.*	13.2	43
9.06	Internet bandwidth, kb/s/capita*	23.5	**30**
	10th pillar: Market size		
10.01	Domestic market size index, 1–7 (best)*	4.9	**20**
10.02	Foreign market size index, 1–7 (best)*	5.6	**22**
	11th pillar: Business sophistication		
11.01	Local supplier quantity	5.5	**16**
11.02	Local supplier quality	4.9	44
11.03	State of cluster development	3.0	106
11.04	Nature of competitive advantage	3.4	70
11.05	Value chain breadth	3.8	54
11.06	Control of international distribution	3.9	77
11.07	Production process sophistication	4.0	51
11.08	Extent of marketing	4.2	65
11.09	Willingness to delegate authority	3.9	52
	12th pillar: Innovation		
12.01	Capacity for innovation	3.3	49
12.02	Quality of scientific research institutions	4.1	44
12.03	Company spending on R&D	2.9	80
12.04	University-industry collaboration in R&D	3.6	65
12.05	Gov't procurement of advanced tech products	3.3	100
12.06	Availability of scientists and engineers	4.1	67
12.07	Utility patents granted/million pop.*	1.0	56