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The lack of structural changes and rapid deindustrialisation are the main reasons behind Croatia's failure in achieving its industrial potential. One of the aims of this article is to show that the process of deindustrialisation that occurred in Croatia is characterised by factors different that those in developed countries. This is shown using econometric analysis. In our opinion those differences should be taken into account when considering new industrial strategies after 2008. Furthermore we explore if, in light of this specificity, the proposed Croatian industrial strategy is a suitable answer to modern economic challenges. After a detailed analysis and review of the industrial strategy, we offer potential solutions.

Keywords: industry; deindustrialisation; industrial policy; Croatian transport policy; time series analysis

JEL classification: C13, E23, O38, F16

1. Introduction

Deindustrialisation – the decreasing importance of the industrial sector – is a phenomenon observed in most countries. Defined as the relative decrease in employment in industry or share of industry in GDP, deindustrialisation in the literature is considered to be a natural stage in the course of economic development (see for example Rowthorn & Ramaswamy, 1997a, 1997b; Rowthorn & Wells, 1987). This opinion is the result of many studies of this phenomenon conducted mostly in developed countries.[1] However, the data also provides a clear picture of deindustrialisation in countries that are not considered developed. This conclusion stems from the fact that this process in developing and transition countries begins at much lower levels of per capita income, while at the same time these countries experience an absolute decline of industry both in terms of employment and value added, which is not the case in developed countries.

It is believed that industry is still an important factor of economic growth, although it ceases to be an activity that employs the most workers, as new technologies replace human labour. Therefore, especially after the economic crisis in 2008, countries are considering an array of different measures geared toward encouraging industrial growth.

We conduct an empirical analysis of the process of deindustrialisation in Croatia in order to see whether this process is considered 'natural' and whether it is comparable to those in developed countries, or is characterised by different factors. Croatia has a specific history. Until 1990, it followed a socialist economic model, which put exclusive

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emphasis on the development of (primarily heavy) industry, whereas structural changes as well as opening the country to international trade were sidelined. Additionally, it is a country marked by the war which caused major economic losses, and a transition characterised by poor implementation of privatisation, liberalisation and deregulation. Above all, after proclaiming independence, Croatia lost its former markets, including the former Yugoslavia states. These events help to explain why it stands out as an example of absolute deindustrialisation. Therefore, if the analysis shows that the process of deindustrialisation is different, it is necessary to harmonise the industrial policy in accordance with the specifics of the Croatian economy. The fact that the Croatian industrial policy must be tailored according to the template industrial policy of the EU is something that also has to be taken into consideration. Finally, after a critical review of the Croatian industrial strategy, we offer several proposals aimed at improving it.

The article is structured as follows. The introduction is followed by an analysis of the process of deindustrialisation. Based on the most important results of relevant studies and on the main causes of the deindustrialisation, we form an econometric model which attempts to explain causes of deindustrialisation in Croatia. The end of this chapter brings the interpretation of results of the empirical analysis. The third chapter critically examines the proposed Croatian industrial strategy. After considering the importance and the main objectives of the 'new' industrial strategy of the EU, the Croatian industrial strategy is analysed and recommendations for its improvement are given. Finally, the last part of the article concludes.

2. Deindustrialisation

2.1. Literature overview

Rowthorn and Wells (1987) construct a basic model of deindustrialisation. According to the authors, the long-term structural changes are induced by two (internal) factors: productivity growth at different rates across sectors (the lowest in the service sector) and differences in the income elasticity of demand. Thereby the main driving force of structural change is the rate of change in productivity – its growth leads to growth in per capita income which in turn affects the structure of demand. Increased demand then leads to the development of new sectors, or more specifically, the service sector. In their later studies Rowthorn and Ramaswamy (1997a, 1997b) vigorously advocate the suggestion that deindustrialisation is primarily a characteristic of successful economic development caused by internal factors. Rowthorn and Coutts (2004) also conclude that the most important causes of deindustrialisation are internal, such as productivity growth and changes in consumption patterns, but trade with low-income countries also showed as a significant factor.

Along with these studies that consider internal causes as the main determinants of deindustrialisation, there are authors who advocate the opinion that deindustrialisation is primarily a result of external factors. For example, Sachs and Shatz (1994) empirically show that the increasing volume of international trade is the most important cause of deindustrialisation in the US. Lawrence (1983) concludes that about a third of the fall in employment in industry in the US is caused by trade. Wood (1995) shows that increased volume of trade with developing countries can cause a great drop in industry in OECD countries. He explains this by the fact that industrial products imported from developing countries are labour intensive, which leads to a displacement of low-skilled workers in developed countries. At the same time, with the growth of GDP per capita, the demand for services grows, so the employment rate in this sector increases. Although trade is a

significant factor, Saeger (1997, p. 580) finds that trade among OECD countries cannot be considered the main cause of deindustrialisation.

Eventually, models have expanded with the aim of identifying additional external effects on deindustrialisation. In particular, attempts have been made to explore the impact of globalisation on deindustrialisation. The first such study was published by Alderson (1999). His results showed that FDI reduces industrial employment and shifts investment from industry to the service sector. He also concludes that trade in industrial goods caused a reduction of the industrial employment share in developed countries.

All of the presented papers seek to assess which factors have the strongest effect on deindustrialisation. After much research the general conclusion is that internal factors are stronger than external factors, and therefore represent the main causes of deindustrialisation. Consequently, when modelling deindustrialisation, Rowthorn's model is in most cases used as a starting point. However, most studies are based on data for developed countries; therefore deindustrialisation at lower levels of income in formerly socialist (developing) countries is still mainly uncharted territory.

Mickiewicz and Zalewska wrote several papers trying to cover various aspects of deindustrialisation in former socialist countries. In their paper from 2001, they model the employment evolution structure in these economies. They conclude that in countries where reforms were more efficient both the decrease in GDP and the share of industry in GDP would be smaller (Zalewska, 2001, p. 18). They also conclude that the structural evolution of the economy is affected more by the speed and quality of reforms than by GDP levels. They also stress that rapid deindustrialisation is not the optimal path of transition. In their later paper Mickiewicz and Zalewska (2002) prove a negative relationship between the size of deindustrialisation and the effectiveness and consistency of market reforms.

However, due to the lack of a long-term data series, an empirical analysis of the process of deindustrialisation on former socialist countries separately has not been conducted. After the establishment of a long-term data series for Croatia, we will estimate a model of deindustrialisation in order to determine its most important causes. This will help us to answer whether the process of deindustrialisation in Croatia is synonymous to the one that occurred in developed countries, and whether it is defined by the same factors.

2.2. Data description and sources

The process of deindustrialisation is usually analysed over a long period of time. In order to empirically analyse the process of deindustrialisation in Croatia, the first necessary step was to create a sufficiently long time series. Specifically, we needed a long-term time series on employment, GDP and labour productivity by sector, and also on investment, international trade and, as control variables in the model, unemployment and inflation. Due to changes not only in economic systems but also frequent changes in statistical methodology, the question of establishing a consistent series was especially challenging. The estimation was based on data from the National Statistics of the Republic of Croatia, as calculated in Penava (2014).

Estimated by their growth rates, the time series for the 1958–2012 period were made for GDP, gross value added (GVA) and employment by sector (data are estimated for three sectors – primary (agriculture), secondary (industry) and tertiary (services), where industry refers to a broader set of activities including mining and quarrying, energy and construction). The estimation could not be made at a lower level of aggregation due to frequent changing of classifications (of which some are close to incomparable).

Similarly, using data available from the National Statistics database other variables were estimated. The evaluation of an econometric model of the process of deindustrialisation in Croatia was conducted on annual data for the period of 55 years, from 1958 to 2012. The model was estimated in growth rates, i.e. all variables not expressed in growth rates were logarithmically transformed. A selection of variables in the model has been made on the basis of previous research and the specific needs of this article. Table 1 provides a description of the variables and their expected signs that are in line with economic theory and previous research.

The dependent variable measures employment in industry as a share of total employment. As GDP grows the employment share of industry rises in the first phase, but then starts to fall after a certain level of income. The declining values for the dependent variable indicate the process of deindustrialisation. As Croatia already crossed the threshold in the years analysed, the regression equation is not quadratic and the sign of GDP per capita is negative. The second explanatory variable (unbalanced productivity growth – NLP) measures the difference between that year's increase in value added per worker in industry and services. Since productivity growth is considered one of the most important causes of deindustrialisation the expected sign is negative. The model includes also gross fixed capital formation, and since larger investments (which are usually characteristic of

Table 1. Data description and sources.

Code	Variable	Source	Expected sign
EMPIS	Employment in industry (% of total employment)	Authors' calculations according to data from SGJ, SLJRH, and publication „Employment and wages"	–
GDPPC	Gross domestic product per capita, thousand HRK	Authors' calculations according to data from SLJRH 1992 & 1997 and First release No. 12.1.4., 2014	Negative
NLP	Unbalanced labour productivity growth (the value added growth per worker in the industry minus the value added growth per worker in services)	Authors' calculations based on data on GDP and employment	Negative
GFCF	Gross fixed capital formation, thousand HRK	Authors' calculations according to data from SGJ, SLJRH, and First release No. 12.2.1., 2013	Positive
TRADE	Export–import ratio	Authors' calculations according to data from SGJ, SGH, SLJRH and CNB	Negative
CPI	The annual rate of inflation	Authors' calculations according to data from SGJ, SGH and Economic indicators (CNB)	Positive
UNEMR	Share of unemployed in total population	Authors' calculations according to data from the CES and CBS	Negative
DSOC	Dummy (binary) variable – it takes the value 1 for the period of socialism, and 0 for the transition period (after 1990)	Authors' calculations	Positive

Note: Statistical Yearbook of Yugoslavia (SGJ); Statistical Yearbook of the Republic of Croatia (SLJRH); Statistical Yearbook of the Federal Republic of Croatia (SGH); Croatian National Bank (CNB); Central Bureau of Statistics (CBS); Croatian Employment Service (CES).

the industrial sector) lead to higher demand for industrial products, the expected sign is positive. As for the variable trade (export–import ratio), its purpose is to pick up the effects of international trade on economic structure. Družić et al. (2011, p. 90) suggest that the export–import ratio, with all necessary limitations, can be used as an indicator of national economic competitiveness. A larger export–import ratio should lead to greater competitiveness, which should in turn lead to greater productivity and lower employment in the industrial sector, so the expected sign is negative. The control variables are inflation and unemployment rate, recorded as the annual rate of inflation and as the share of unemployed in total population. Their expected signs are positive and negative, respectively. The model also includes a dummy (binary) variable which takes the value 1 for the period of socialism, and 0 for the transition period (after 1990). The expected sign is positive since industry was the preferred sector in the socialist system.

2.3. Time series analysis of deindustrialisation in Croatia

To examine the process of deindustrialisation in Croatia and to determine the most important causes of this process, the following multiple linear regression model is estimated using the least squares method:

$$EMPIS_t = \alpha + \beta_1 GDPPC_t + \beta_2 NLP_t + \beta_3 GFCF_t + \beta_4 TRADE_t + \beta_5 INFL_t + \beta_6 UNEMR_t + DSOC + \epsilon_t.$$

$$(1)$$

The variables in the model are described earlier, while ϵ_t represents 'iid' (independently and identically distributed) errors, that is the error where indices t denote the time component (year). Non-stationary variables are differentiated.[2]

2.4. Results

Table 2 contains the results of the impact assessment of the selected macroeconomic variables on industrial employment in Croatia.[3]

The coefficient for GDP per capita is positive and statistically significant at the 1% level. The sign is opposite to economic intuition which suggests that GDP per capita did not take the same role in the model of deindustrialisation as it was the case in developed countries. Analysis shows that GDP growth in Croatia has a positive influence on the employment share in industry. A possible explanation can be the fact that the Croatian industrial sector behaves in an extremely procyclical fashion. Based on the model results it can be concluded that, on average and all other things being equal, with unbalanced labour productivity growth, the share of employment in industry decreases. In other words, the higher the relative productivity in industry compared to services, the smaller the employment share in industry. The coefficient on NLP is also statistically significant in the model and the sign is as expected. Furthermore, the coefficient for investment proved to be statistically significant, but the sign is again opposite to what was expected. Economic theory suggests that investment growth leads to an increase in the share of industrial employment, while it has the contrary effect in the estimated model. We can assume either investment was inefficient in terms of employment growth in the industry or that labour productivity has increased significantly due to new investments, which led to job losses. Given the Croatian economic situation in the whole observed period, the former is more likely.

Table 2. The results of multiple linear regression analysis of deindustrialisation in Croatia – Dependent variable: employment in industry (% share).

Dependent Variable: DEMPIS
Method: Least Squares
Sample (adjusted): 1962 2012
Included observations: 49 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLGDPPC	6.540529	1.910110	3.424164	**0.0014**[*]
NLP	−15.54010	1.641377	−9.467718	**0.0000**[*]
LGFCF	−0.034064	0.013301	−2.560990	**0.0141**[**]
TRADE	0.002009	0.003679	0.546028	0.5879
CPI	−0.000815	0.000357	−2.285937	**0.0274**[**]
DUNEMR	−0.426784	0.193224	−2.208753	**0.0327**[**]
DSOC	0.399093	0.165107	2.417181	**0.0201**[**]
R-squared	0.774805	Mean dependent var		−0.506070
Adjusted R-squared	0.742634	S.D. dependent var		0.930771
S.E. of regression	0.472192	Akaike info criterion		1.468701
Sum squared resid	9.364541	Schwarz criterion		1.738961
Log likelihood	−28.98318	Hannan-Quinn criter.		1.571238
Durbin-Watson stat	1.720606			

Note: **and *indicate statistical significance at 1% and 5% level.
Source: Authors' calculations.

The coefficient representing the export–import ratio is statistically insignificant. If we interpret the export–import ratio as an indicator of competitiveness of the economy, we can conclude that its effect on deindustrialisation is vague. This result is inconsistent with the results of the above analysed studies, but if we take into consideration the type of economy in former Yugoslavia (where inclusion in international trade patterns began in the 1970s, and the process of transition after the 1990s resulted in a drastic change in trade patterns because of a sudden opening to international competition), the fact that the coefficient is insignificant is not entirely unexpected.

Furthermore, according to our results, the coefficient for inflation is statistically significant, but the sign is again the opposite of what was expected. The coefficient for unemployment is statistically significant and in line with mainstream theory. As these two control variables tend to correct a model for the business cycle, it is clear that Croatia does not have standard business cycles. This may be the result of hyperinflation that is characteristic of the country in the 1990s.

Finally, the regression coefficient on the dummy variable has a positive sign and is significant in the model at the 5% level. This suggests that the share of employment in industry, *ceteris paribus*, was higher than the average during socialism.

Based on the results, we can conclude that the process of deindustrialisation in Croatia is not synonymous with this process in developed countries. Econometric analysis has confirmed that deindustrialisation in Croatia is not influenced by the same factors as developed countries. In the context of these results we proceed by critically examining Croatia's industrial strategy.

3.   Analysis of the Croatian industrial strategy

Croatian Industrial Strategy 2014–2020 (henceforth: Strategy) is a document of 343 pages. The first 84 pages constitute an introduction which is followed by a detailed

analysis of industrial sectors according to NACE 2007. The Strategy defines 'industry' as consisting of the following activities: C – Manufacturing, F – Construction and J – Information and communication.

The following variables are analysed for manufacturing activities: profitability, employment, international trade, structure according to technological intensity, productivity, liquidity, indebtedness, and GVA, company size and selected performance indicators, for a period of three years (2010–2012). After analysing the manufacturing section at an aggregate level, the focus shifts to divisions (lower level of aggregation), and this together makes up 282 of a total of 343 pages. The Strategy's core constitutes the last 18% of the document where the objectives and analytical tools used for their determination are described.

The main Strategy objective is stated as the 're-positioning of the identified strategic activities in the global value chain toward developing activities that create added value' (Croatian Industrial Strategy, 300). From the secondary Strategy goals it is clear that Croatia is opting for reindustrialisation (visible by target increase of industrial employment by over 85.000). The plan is to realise this reindustrialisation by directing industry to activities where a realistic possibility for strategic positioning at higher levels of added value exists. On the national level that means Croatia must determine its strategic industries which have a potential to achieve global competitiveness (Croatian Industrial Strategy, 299). The term 'strategic industries' applies to activities and divisions that are considered strategically important.

Based on a model, the following activities (ranked in order of importance) were chosen as the most perspective in terms of aggregate industrial growth and are considered as strategic industries:

C21 – Manufacture of basic pharmaceutical products and pharmaceutical preparations
C26 – Manufacture of computer, electronic and optical products
C25 – Manufacture of fabricated metal products, except machinery and equipment
 J62 – Computer programming, consultancy and related activities
C27 – Manufacture of electrical equipment
C28 – Manufacture of machinery and equipment not elsewhere classified.

The list also contains C10 – Manufacture of food products (due to its large share in total GDP on the one hand, and food self-sufficiency on the other) and C31 – Manufacture of furniture (due to Croatia's comparative advantage in this area).

Therefore, the final list is the result of empirical analysis supplemented with economic intuition that takes into account the specificities of the Croatian economy (C10 and C31). We consider this approach correct, because a serious economic study requires adequate doses of both empirical analysis and economic intuition. The actual execution of this approach, in our opinion, leaves room for improvement.

Firstly, as for the empirical part, the problem is the fact that the analysis is based on a period of just three years (2010–2012), which is inadequate for the analysis of industry trends, especially if you plan to use this analysis to form a long-term industrial strategy. Also, the representativeness of the data-set is hindered by the fact that three years included in the analysis were recessional.

Secondly, even if the sample were adequate, the question is how much attention in the context of Croatian economic reality should be given to information on firm market performance. Simple 'listening' to the market in the form of EBITDA (earnings before interest, taxes, depreciation and amortization) per employee and basing the long-term

industrial policy at current market performance is something that is appropriate if the market operates relatively close to perfect competition assumptions. This approach is perhaps valid for a narrow elite circle of highly developed countries. It is obvious that Croatia currently does not belong in this group, namely, that it is still finding its way into the world market economy.

This argument is supported with results of econometric analysis carried out in this article. It is clear that the phenomenon of deindustrialisation in Croatia took a significantly different form then it did in developed countries, i.e. that nominally identical types of economies are characterised by deep structural differences. In other words, the long term structure of the Croatian economy is affected by factors different than those in developed countries.

Bearing this in mind, it is preferable we detach from the generic, standard analysis, in favour of policies tailored to the: (1) specificity of Croatian economic situation; and (2) European initiatives.

In light of these facts, it is worth taking a closer look at EU's long-term transport policy, as defined by the latest (2011) edition of the 'White paper'. The main goals of the policy are the improvement of EU's current transport infrastructure, thus enabling faster economic growth, while simultaneously reducing the Union's dependence on imported energy, and also reducing greenhouse emissions caused by transport activities up to 60% by the year 2050. One of the more interesting goals (as far as this article is concerned) listed in the White paper, is a planned 50% restructuring of medium-distance passenger and cargo transport from motor vehicles to railway and river transportation.

One of the main characteristics of Croatia's geostrategic position is its transport position, which on the one hand offers the shortest route from central Europe to the Mediterranean, while on the other stands directly in the route connecting Europe to the Middle East. A strong European emphasis on railroad transport, coupled with the fact that TEN-T (Trans-European Transport Networks, Ministarstvo pomorstva prometa i infrastrukture Republike Hrvatske, 2013) also includes modernising railways in Croatia, leads to the conclusion that railroad transportation deserves to be looked at closely when considering Croatia's industrial strategy. The mixture of standard and advanced technology that modern railways embody seems tailored to former socialist countries which already has an industrial base that needs to be modernised with the help of a highly educated workforce.

As far as human resources are concerned, according to CES[4] (Croatian Employment Service) Croatia has 4908 unemployed engineers and scientists with a university degree, 25,449 unemployed engineers and technicians of technology, 20,332 unemployed metal workers, mechanics, and electrical technicians and 40,058 unemployed in simple mining, construction, transport and similar professions. Together, this presents over 90,000 unemployed individuals with professions roughly compatible with modern railway development, which is almost a third of total unemployment.

To summarise, we believe that the Croatian industrial strategy devoted insufficient attention to the activities C30 (Manufacture of other transport equipment) and F42 (Civil engineering). Specifically, we think of divisions C30.2 (Manufacture of railway locomotives and rolling stock) and F42.1 (Construction of roads and railways). These two divisions together employ nearly 17,000 employees, and based on the 'evaluation and ranking' they are classified as 'problematic', i.e., those that are considered almost irrelevant for the future of Croatian industry.

At the same time EU's long-term transport policy envisions a radical shift from motor vehicles to railway transport by 2050. A vast trans-European railway network is

planned, which involves repairing and improving railway's across Europe, as well as building an additional 16,800 kilometres of railway track. One other interesting detail can be found in the strategy proposed by the European Commission (2014, p. 3) where it is stated that the Commission proposes a package of measures which are intended to help railway operators entering and doing business in the EU market.

If we couple this with the econometrically observed specificity of Croatian deindustrialisation, and the 90,000 strong unemployed workforce with professions roughly compatible with the development of modern railways, we come to the conclusion that divisions C30.2 and F42.1 at the very least deserve a 'promotion' to the category of 'questionable', if not to the very core of Croatia's industrial strategy.

4. Conclusion

The results of the empirical analysis have shown that deindustrialisation in Croatia has taken a different shape then in developed countries. While in developed countries development, productivity growth, investment and international trade play a major role, this is not the case in Croatia. Development did not take the same role in the model of deindustrialisation of Croatia as it was the case in developed countries, investments do not have the expected impact, and international trade is not a statistically significant variable in the model.

At the same time, it turned out that the dummy variable for socialism is significant in the model. It shows that deindustrialisation occurred just after Croatian independence. All of this suggests profound structural differences between these economies.

After analysing the Croatian industrial strategy and taking into account both the European long-term transport policy and the specificities of deindustrialisation in Croatia, the conclusion is that it could be significantly improved. In fact, both phenomena suggest the railways should present a core element in Croatia's reindustrialisation. We believe that taking this into consideration would contribute to the development of Croatian industry.

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Notes

1. Although the research papers that emphasise the importance of deindustrialisation are numerous, empirical studies are rare and are related to specific countries, which are mostly OECD countries (Alderson, 1999; Boulhol & Fontagné, 2006; Iversen & Cusack, 2000; Kollmeyer, 2009; Nickell, Redding, & Swaffield, 2008; Rowthorn & Coutts, 2004; Rowthorn & Ramaswamy, 1997b; Saeger, 1997b) and the US (e.g. Lawrence, 1983) and the UK (e.g. Rowthorn & Wells, 1987). Research in other countries are the exceptions. Post-communist countries as a group were studied only by Mickiewicz and Zalewska (2001, 2002, 2006).
2. The following variables are stationary in levels: NLP, TRADE, GFCF and CPI.
3. The results of diagnostic tests indicate the adequacy of the estimated model. Model diagnostics is available upon request.
4. HZZ, http://burzarada.hzz.hr/Posloprimac_RadnaMjesta.aspx [21. 4. 2014.].

References

Alderson, A. S. (1999, October). Explaining deindustrialization: Globalization, failure, or success? *American Sociological Review, 64*, 701–721.

Boulhol, H., & Fontagné, L. (2006, March). *Deindustrialisation and the fear of relocations in the industry*. CEPII (Working Paper No. 2006-07).

Central Bureau of Statistics (CBS). Retrieved from http://www.dzs.hr

Croatian Employment Service (CES). Retrieved from http://www.hzz.hr

Croatian Industrial Strategy 2014 – 2020. (2014). Zagreb: Ministry of Economy, Republic of Croatia.

Družić, I., Boras, T., & Raguž, I. (2011). Oscilacije performansi hrvatskog gospodarstva 2000 – 2010 [Oscillation of performances of the Croatian economy 2000–2010]. In U. A. Obadić, J. Šimurina, & J. Tica (Eds.), *ur. Kriza: preobrazba ili propast?* (pp. 75–93). Zagreb: Ekonomski fakultet Zagreb.

European Commission. (2014). Komunikacija komisije europskom parlamentu, vijeću, europskom gospodarskom i socijalnom odboru i odboru regija - Za europsku industrijsku renesansu [Communication from the Commission to the European parliament, the Council, the European economic and social committee and the Committee of the regions: For a European industrial renaissance]. *COM(2014) 14 final*, Bruxelles.

Hrvatska narodna banka (HNB). Retrieved from http://www.hnb.hr

Iversen, T., & Cusack, T. R. (2000, April). The causes of welfare state expansion: Deindustrialization or globalization?. *World Politics, 52*, 313–349.

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

Lawrence, R. Z. (1983). Is trade deindustrializing America? A medium-term perspective. *Brookings Papers on Economic Activity, 14*, 129–172.

Mickiewicz, T., & Zalewska, A. (2001). *Deindustrialisation and structural change during the post-communist transition*. William Davidson Institute (Working Paper No. 383).

Mickiewicz, T., & Zalewska, A. (2002). *Deindustrialisation. Lessons from the structural outcomes of post-communist transition*. William Davidson Institute (Working Paper No. 463).

Mickiewicz, T., & Zalewska, A. (2006). Deindustrialisation: Rowthorn and Wells' model revisited. *Acta Oeconomica, 56*, 143–266.

Ministarstvo pomorstva prometa i infrastrukture Republike Hrvatske [Ministry of Maritime Affairs, Transport and Infrastructure] (2013). TEN-T Days - Položaj Hrvatske u prometnoj mreži Europske unije [TEN-T Days: Croatian position in the transport network of the European Union]. Retrieved April 21, 2014, from http://www.mppi.hr/default.aspx?id=10391

Nickell, S., Redding, S., & Swaffield, J. (2008). The uneven pace of deindustrialisation in the OECD. *The World Economy, Wiley Blackwell, 31*, 1154–1184.

Penava, M. (2014). *Makroekonomija hrvatske deindustrijalizacije* [Macroeconomics of Croatian deindustrialization]. Zagreb: Ekonomski fakultet - Zagreb, (monografija).

Rowthorn, R., & Coutts, K. (2004, May). Deindustrialization and the balance of payments in advanced economies. *Cambridge Journal of Economics, 28*, 767–790.

Rowthorn, R., & Ramaswamy, R. (1997a, April). *Deindustrialization: Causes and implications* (IMF Working Paper).

Rowthorn, R., & Ramaswamy, R. (1997b). *Deindustrialization – Its causes and implications*. Economic Issues, 10.

Rowthorn, R. E., & Wells, J. R. (1987). *Deindustrialisation and foreign trade*. Cambridge: Cambridge University Press.

Sachs, J. D., & Shatz, H. J. (1994). Trade and jobs in U.S. Manufacturing. *Brookings Papers on Economic Activity, 1994*, 1–84.

Saeger, S. S. (1997). Globalization and deindustrialization: Myth and reality in the OECD. *Review of World Economics (Weltwirtschaftliches Archiv), 133*, 579–608.

Wood, A. 1995. How trade hurt unskilled workers. *The Journal of Economic Perspectives*, *9* (3), 57–80.