DO MACRO-ECONOMIC VARIABLES AFFECT FACTORING SERVICES?
A CROSS COUNTRY ANALYSIS

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*P*URPOSE
FACTORING is a method of financing and credit management against the bill receivables of the client firms. This financing service may be affected by many socio-economic variables. Thus, the current research paper assesses the impact of macro socio-economic variables on factoring services across the countries.

Design/Methodology/Approach: *Secondary data published by international agencies i.e., Factors Chain International (FCI) and World Bank have been used for the present study. 49 countries have been taken into consideration, which include 30 developed countries and 19 developing countries. These countries have factoring data consistently year after year from 1998 to 2016. The required factoring data and socio-economic variables data have been used to construct the panel dataset. Data have been analyzed by using Ordinary Least Squares (OLS) method and The Fixed Effects Model to estimate the determinants of factoring across the countries.*

Findings: *The finding revealed that macro socio-economic variables affect the factoring service across the countries. Globally, the most important macro socio-economic variables of factoring services are trade openness, exchange rate, and services. The elasticity of each variable is more than unitary (one). Other important socio-economic variables are lending interest rate, financial services, credit to domestic private sector, gross domestic saving, and GDP per capita. In case of case of developed countries, socio-economic variables such as ICT, bank non performing loan, inflation, and market capital affect the factoring services.*

Research Limitations: *Data have not been consistently available for all countries. So, in the present study only 49 countries have been considered on the basis of availability of the data for a period from 1998 to 2016.*

Practical Implications: *The results suggest that there should be a sustainable and long long-term conducive credit and financing environment and policies related to account receivables which facilitate long-term development of factoring.*

Originality/Value: *This study is a cross country analysis of factoring. There are few studies which cover impact of socio-economic variables on factoring service.*

Key Words*: Factor, International Trade, Receivables, Financial Intermediary, Macro-Economic Variables.*

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Introduction

Factoring is a financial service that provides a wide range of services, such as, accounts receivable, book keeping, credit protection, financing, and collection services to its clients. Factoring service is availed across the countries, but its penetration differs in the financial markets of developed and developing countries. The factoring service has the benefits over traditional forms of lending. It does require loans collateralization of fixed assets. Factor provides many types of financial services to its clients ranging from books maintenance to covering high level financing risk of its client domestically as well as globally. Factoring, basically, is related to providing customized and comprehensive financial services to its high-risk informational opaque clients. It is an underwriting the risk of the accounts receivable of its clients. It provides insurance to the sellers for smooth availability of liquid funds against the accounts receivable. Factoring is a method of immediate release of blocked fund in the account receivables in addition to the bundle of services. A factor is a specialized agency which is out rightly purchases account receivables of the clients and immediate release the amount blocked in the account receivables. This saves cost and time of the clients, in turn, may focus on core business activities.

Factoring is frequently used in international trade. It is wide spread in developed countries and developing countries. It has an advantage over other form of lending, such as loans collateralized by fixed assets, under certain conditions. The factoring service is affected by a number of socio-economic variables across the countries. Thus, the study is focusing on the estimation and assessment of impact of social-economic variables on factoring services across the countries.

Review of Literature

The enterprise's size, type of product or service it offers, industry, sector, age, turnover, value of the firm's debt, type of customers, financial statement, the management team, operational suitability, collectability, and credit notes were an important determinant in firm's choice of factoring as a source of finance for working capital and an instrument to cash-flow improvement (Soufani, 2002). The factoring industry is an important part of many financial systems and it is a major source of finance requirements for a growing number of companies. Firm size, economic efficiency, and ownership structure influence the factoring firm's efficiency (Franco, & Philip, 2004). Factoring is larger in countries having greater economic development and growth and developed credit information bureaus (Klapper, 2006). The determinants of the level of factoring activity in an economy depends on first, the availability of financial information about enterprises; and second, the overall level of economic activity (Alayemi, Oyeleye, & Adeoye, 2015). Factoring is claimed to be a promising alternative financing method for SME sellers. There is a negative association between Factoring/GDP and the percentage of financially obstacle firms. This relationship is found to be stronger in countries with higher values of the Credit Information Index, representing to what extent information about obligors is available to providers of financing (Kaster, 2013). The analysis of the usefulness and cost-effectiveness of factoring shows that in the period 2010–2014 in which market instabilities were observed, factoring was a useful and frequently employed means of short-term funding (Pigu³a, & Paduszyñska, 2015). The conducive legal and regulatory environment is important for the growth of factoring business across the countries (Suzana, Bogdan, & Ivanovic, 2017; Tamara, & Ksenija, 2012).

There is dearth of literature related to the determinants of factoring financial services. This literature gap is the main motivation for taking up the topic.

Objective of the Study

The objective of the present study is to examine whether macro-economic variables affect factoring services across the countries.

Research Methodology

Panel data methodology has been used to estimate the impact of individual variables on factoring service across the countries.

Data Source: Secondary data published by international agencies i.e., Factors Chain International (FCI) and World Bank have been used for the present study. 49 countries have been taken into consideration, which include 30 developed countries and 19 developing countries. These countries have factoring data consistently year after year from 1998 to 2016. The required factoring data and socio-economic variables data have been used to construct the panel dataset. Data have been analyzed by using Ordinary Least Squares (OLS) method and The Fixed Effects Model to estimate the determinants of factoring across the countries.

The study has arranged and classified the factoring service data as dependent variable and the socio-economic variables data as independent or explanatory variables. This is a panel dataset. The dataset is classified into developed countries and developing countries. The panel dataset is primarily constructed for using Ordinary Least Squares (OLS) statistical tests, such as The Fixed Effects Model, to estimate the important socio-economic determinants of factoring services across the countries.

The growth of factoring is differed from country to country, region to region.. These countries, regions and zones also have different level of economic development. The paper applies Ordinary Least Squares (OLS) statistical tests, such as The Fixed Effects Model (Least Squares Dummy Variable Model). The paper is required to test and estimate the important socio-economic variables, such as exchange rate, GDP, trade, trade openness, financial services, bank loan etc., affecting the factoring service across the globe and in different country grouping. The methodology is suited to the present study because it helps to study and estimate individual impact of macro socio-economic variables on the factoring services for developed countries and developing countries. Dependent variable is factoring service. Independent variables cover range of socio-economic variables such as GDP, trade, ICT, loans, financial services, etc.

Panel Regression Fixed Effect Models

A general form of panel data regression model is

$$y_{it} = a + bx_{it} + \varepsilon_{it}$$

Where y is the dependent variable, x is the independent variable, a and b are coefficients, i and t are indices for individuals and time. The error ε_{it} is very important in this analysis. In a fixed effects model, is assumed to vary non-stochastically over i or t making the fixed effects model analogous to a dummy variable model in one dimension.

The Least Squares Dummy Variable Mode (Fixed Effects Model)

This method helps to determine the individual effects of independent variables on dependent variable. It would provide constant slopes of the explanatory (independent) variables, socio-economic variables but intercepts may differ as per country grouping such as developed country and developing country grouping. It would estimate the individual elasticity of socio-economic variables.

Research Model

The fixed effects model is:

$$(FT)_{it} = e^{\{[\alpha_0] + [\beta_1]*(t) + D_2 + [\beta_2]*D_2(t)\}} . (ExRate)_{it}^{\beta 3} . (Bank\_NPL)_{it}^{\beta 4} . (Bank\_Branch)_{it}^{\beta 5} .$$

$$(ICT)_{it}^{\beta 6} . (CreditPvt\_Dom))_{it}^{\beta 7} . (Trade)_{it}^{\beta 8} . (GDPPC)_{it}^{\beta 9} . (GDS)_{it}^{\beta 10} .$$

$(Inflation)_{it}{}^{\beta 11}.(Fin\_Ser)_{it}{}^{\beta 12}.(IntPay\_Rev)_{it}{}^{\beta 13}.(Lend\_Rate)_{it}{}^{\beta 14}.\ (GDPPCMkt\_Captn)_{it}{}^{\beta 15}.(NDC)_{it}{}^{\beta 16}.(Real\_Int)_{it}{}^{\beta 17}.(Service)_{it}{}^{\beta 18}.$

$(Reserve)_{it}{}^{\beta 19}.(Trade\_Opn)_{it}{}^{\beta 20}D_2.(ExRate)_{it}{}^{\beta 21}.D_2.(Bank\_NPL)_{it}{}^{\beta 22}D_2.(Bank\_Branch)_{it}{}^{\beta 23}D_2.(ICT)_{it}{}^{\beta 24}D_2.(CreditPvt\_Dom))_{it}{}^{\beta 25}D_2.(Trade)_{it}{}^{\beta 26}D_2.(GDPPC)_{it}{}^{\beta 27}D_2.(GDS)_{it}{}^{\beta 28}D_2.(Inflation)_{it}{}^{\beta 29}D_2.(Fin\_Ser)_{it}{}^{\beta 30}D_2.(IntPay\_Rev)_{it}{}^{\beta 31}.\ D_2(Lend\_Rate)_{it}{}^{\beta 32}D_2.(Mkt\_Captn)_{it}{}^{\beta 33}D_2.(NDC)_{it}{}^{\beta 34}D_2.(Real\_Int)_{it}{}^{\beta 35}D_2.(Service)_{it}{}^{\beta 36}D_2.(Reserve)_{it}{}^{\beta 37}D_2.(Trade\_Opn)_{it}{}^{\beta 38}.$

For estimation of elasticies of socio-economuic variables, it takes both side log and error term.

$(FT)_{it} = \alpha_0 + \beta_1*(t) + D_2 + \beta_2*D_2(t) + \beta_3L(ExRate)_{it} + \beta_4L(Bank\_NPL)_{it} + \beta_5L(Bank\_Branch)_{it} + \beta_6L(ICT)_{it} + \beta_7L(CreditPvt\_Dom))_{it} + \beta_8L(Trade)_{it} + \beta_9L(GDPPC)_{it} + \beta_{10}L(GDS)_{it} + \beta_{11}L(Inflation)_{it} + \beta_{12}L(Fin\_Ser)_{it} + \beta_{13}L(IntPay\_Rev)_{it} + \beta_{14}L(Lend\_Rate)_{it} + \beta_{15}L(Mkt\_Captn)_{it} + \beta_{16}L(NDC)_{it} + \beta_{17}L\ (Real\_Int)_{it} + \beta_{18}L(Service)_{it} + \beta_{19}L(Reserve)_{it} + \beta_{20}L(Trade\_Opn)_{it} + \beta_{21}L(ExRate)_{it}*D_2 + \beta_{22}L(Bank\_NPL)_{it}*D_2 + \beta_{23}L(Bank\_Branch)_{it}*D_2 + \beta_{24}L(ICT)_{it}*D_2 + \beta_{25}L(CreditPvt\_Dom))_{it}*D_2 + \beta_{26}L(Trade)_{it}*D_2 + \beta_{27}L(GDPPC)_{it}*D_2 + \beta_{28}L(GDS)_{it}*D_2 + \beta_{29}L(Inflation)_{it}*D_2 + \beta_{30}L(Fin\_Ser)_{it}*D_2 + \beta_{31}L(IntPay\_Rev)_{it}*D_2 + \beta_{32}L(Lend\_Rate)_{it}*D_2 + \beta_{33}L(GDPPCMkt\_Captn)_{it}*D_2 + \beta_{34}L(NDC)_{it}*D_2 + \beta_{35}L(Real\_Int)_{it}*D_2 + \beta_{36}L(Service)_{it}*D_2 + \beta_{37}L(Reserve)_{it}*D_2 + \beta_{38}L(Trade\_Opn)_{it}*D_2 + U_{it}$

Where, FT= Total Factoring Turnover of the countries

α_0 = Intercept

t = 1998, 1999, ... 2016

β_1 = Growth Rate of World Factoring Services

D_2 = Difference Dummy of Developed Country grouping

β_2 = Compound Annual Growth Rate of Developed Countries' Factoring Service

β_3, β_4, β_5, β_6, β_7, β_8 ....β_{20} = Elasticities of Explanatory Variables of the World

β_{21}, β_{22}, β_{23}, ... β_{38} = Elasticities of Explanatory Variables of Developed Countries.

Nature of Macro-Economic Variables

The study is testing the hypothesis that there is an association between factoring volume and domestic macroeconomic variables.

Dependent Variable: The dependent variable is the world factoring volume which includes domestic and international factoring volume of the countries.

Independent Variables: It includes exchange rate, bank non-performing loan, commercial bank branches, information, communication and technology (ICT), credit to domestic private sector, foreign trade, GDP per capita, gross domestic saving, inflation, financial services, interest payment, lending interest rate, market capitalization of listed companies, net domestic credit, real interest rate, services, total reserve, and trade openness.

Empirical Result and Analysis

Table no. 1 represents the regression model. It indicates that the value of adjusted R-square is 75 percent. It views as the independent variables explained changes in dependent variables up to 75 percent. The estimated value of Durbin-Watson is 1.93. The value is approaching to 2. It means there is least autocorrelation in the residuals of the sample.

Regression Statistics of World Factoring Turnover & Macro Economic Variables

Table No. 1: Regression Statistics

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
0.872ª	0.760	0.750	1.063	1.93

Source: Author's estimation

Table no. 1 indicates that the adjusted R-square value is 75 percent. It means independent variables explain variation in dependent variables to the extent of 75 percent. The Durbin Watson statistic is a number that tests for autocorrelation in the residuals from a statistical regression analysis. The Durbin-Watson statistic is always between 0 and 4. The value of 2 means there is no autocorrelation in the sample. The value of Durbin-Watson, in present case, is 1.93. The value is approaching to 2. It means there is least autocorrelation in the residuals of the sample.

Table No. 2: ANOVA Statistics

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	3065.91	36	85.16	75.41	0.00
Residual	966.67	856	1.13		
Total	4032.58	892			

Source: Author's estimation

**Significant at five per cent level of significance*

Table no. 2 indicates that the F-value is the Mean Square Regression (85.16) divided by the Mean Square Residual (1.13), yielding F= 75.41. The p-value associated with this F value is very small (0.0000). The p-value (0.00) is less than alpha level, (typically 0.05). It means the independents variables i.e. socio-economic variables; reliably predict the dependent variable- the factoring.

Table No. 3: Regression Coefficients

Particular	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig
(Constant)	-112.13	19.84		-5.65	0.00
Time	0.05	0.01	0.13	5.09	0.00
Dummy	1.85	2.04	0.42	0.91	**0.36**
ExRate	1.39	0.50	0.09	2.80	0.01
Bank_NPL	-0.06	0.10	-0.07	-0.62	**0.54**
Bank_Branch	0.21	0.20	0.06	1.09	**0.28**
ICT	-0.73	0.11	-0.55	-6.94	0.00
CreditPvt_Dom	0.68	0.13	0.63	5.14	0.00
Trade	-2.39	0.52	-1.54	-4.58	0.00

Particular	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig
GDPPC (current US$)	0.27	0.11	0.14	2.47	0.01
GDS	0.67	0.12	0.55	5.41	0.00
Inflation	-0.24	0.08	-0.13	-2.94	0.00
Fin_Ser	0.78	0.11	0.64	6.99	0.00
IntPay_Rev	-0.19	0.05	-0.11	-3.57	0.00
Lend_Rate	0.78	0.20	0.24	3.97	0.00
Mkt_Captn	0.11	0.09	0.11	1.27	**0.20**
NDC	0.01	0.09	0.02	0.16	**0.87**
Real_Int	-0.11	0.07	-0.05	-1.54	**0.12**
Service	1.36	0.49	1.02	2.77	0.01
Reserve	0.19	0.15	0.15	1.27	**0.20**
Trade Opn	1.48	0.53	0.42	2.82	0.00
D(ExRate)	-1.80	0.61	-0.12	-2.94	0.00
D(Bank_NPL)	0.51	0.11	2.82	4.47	0.00
D(Bank_Branch)	-0.20	0.22	-0.16	-0.93	**0.35**
D(ICT)	1.35	0.16	7.15	8.49	0.00
D(CreditPvt_Dom)	-0.38	0.16	-2.28	-2.39	0.02
D(GDPPC)	-0.67	0.18	-1.54	-3.70	0.00
D(GDS)	0.22	0.18	1.24	1.21	**0.23**
D(Inflation)	0.27	0.09	0.12	2.91	0.00
D(Fin_Ser)	-0.66	0.12	-3.17	-5.34	0.00
D(IntPay_Rev)	-0.09	0.09	-0.05	-1.07	**0.28**
D(Lend_Rate)	-0.38	0.23	-0.17	-1.66	0.10
D(Mkt_Captn)	0.18	0.10	1.06	1.71	0.09
D(NDC)	-0.46	0.12	-2.88	-3.93	0.00
D(Real_Int)	0.00	0.10	0.00	-0.03	**0.97**
D(Reserve)	-0.42	0.16	-2.26	-2.58	0.01
D(Trade Opn)	0.24	0.26	0.05	0.91	**0.36**

Source: Author's estimation

*Significant at five per cent level of significant

Table no. 3 depicts the regression statistics as the impact of macro-economic variables on factoring business. The minimum level of world factoring volume is highly significant. The annual compound growth rate (ACGR) is 5 percent per annum during 1998-2016. The study has used dummy for developed

countries. But, statistical package for social science (SPSS) is excluded time dummy variable for developed countries. It means developed countries factoring business is growing at same rate as in case of the world. Annual compound growth rate (ACGR) for developed countries is also 5 percent per annum. The SPSS statistical software package also excludes developed country dummy for trade and service.

Exchange Rate (ExRate): Exchange rate is used to convert from one currency to another currency for ensuring payment of international trade. We have taken exchange rate of value of USA dollar to per Euro i.e. $/Euro. Exchange rate should have positive relationship with international factoring volume. As the volume of international factoring will increase, the exchange rate transactions will also increase. The coefficient of exchange rate is 1.39 percent with high level of significance. It means one percent increase in exchange rate transaction will increase to 1.39 percent factoring turnovers. However the slope dummy for developed countries is negative and significant. The possible reason may be the exchange rate is more important for developing country because of developed countries currencies are international currency and no need to convert from one currency to another currency while doing international business.

Bank Non-Performing Loans to Total Gross Loans (Bank_NPL): Relationship between bank non-performing loans to total gross loan and factoring volume should be negative. If the ratio of non-performing loans to total gross loans will increase, then it leads to decrease overall credit environment of the country. This is evident from the impact of global financial crisis which affected overall credit environments across the countries. The coefficient of the ratio is negative but not statistically significant. The coefficient value have low magnitude i.e. -0.06 but not significant. However, direction of the ratio coefficient value is as per our expectation. In case developed countries, the coefficient value is positive and significant. The slope value for developed countries is 0.45 i.e. -0.06 + 0.51. In developed countries, there is a separation and negatively related between banking and financial institution providing factoring service. So, the increase of this ratio will lead to increase the demand of factoring services, because of competition between banking service and financial institution providing factoring service in the market. However, Banks are directly involved in factoring business through their subsidiaries. In general, the increase of non-performing loans leads to decrease of credit facilities through the factor in the market.

Commercial Bank Branches (per 100,000 adults) (Bank_Branch): The relationship between commercial bank branches and factoring service should be positive. With the increase of commercial bank branches will lead to increase of credit facilities in the market, consequently lead to increase factoring business because factoring is depending on credit environment of the country. In our case, commercial bank branches are given as numbers of commercial bank branches available per one lakh adult population. The coefficient is positive but not statistically significant. The value of coefficient is 0.21. However, the direction of coefficient is as per the expectation. Slope dummy of developed countries is negative but not statistically significant.

Computer, Communication and Technological Services (ICT): The relationship between ICT and factoring should have positive. However, the result shows negative relationship and also statistically significant. The value of coefficient is -0.73 which is highly significant. The possible reason for the negative relationship may be concerned with the reliability of use of ICT components in the banking and other financial institution for providing credit and loans to the clients. As per our study of global factoring environment, it may be concluded that most of the countries providing factoring business are not using high level technology and communication system for providing credits and their settlements. However, developed countries are high technology-savvy and using in factoring business. So, the elasticity of slope dummy is positive and statistically significant. The coefficient value is 0.62 i.e. (-0.73 + 1.35). It implies one percent increase in use of ICT in business leads to 0.62 percent increase of factoring business in developed countries.

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Credit to Domestic Private Sector (CreditPvt_Dom): It should have direct and positive relation with the factoring service. The world coefficient is positive and statistically significant. The value of world coefficient is 0.68 at one percent level of significance. It means one percent increase of credit to domestic private sector leads to increase 0.68 percent factoring business globally. However, the value of slope dummy of developed countries is negative and significant i.e. -0.38. The elasticity of developed countries is 0.3 (i.e. -0.38 + 0.68). It implies that one percent increase in credit to private sector leads to 0.3 percent increase in factoring service in developed countries.

Foreign Trade of Goods and Services (Trade): Trade is supposed to play positive role for the international factoring. However, the magnitude of international factoring is low in the total factoring business. Major portion of total factoring business is the domestic factoring. In case of international trade, traders are preferring to use others mode of financing and credit facilities instead of factoring service beacuse of internation transaction and risks are involved. International factoring business has not matured globally. The world coeffient value is -2.39 percent and statistically significant at one percent. As the proportion of international factoring is increased in the total factoring volume, the coefficient value may may turn to positive and significant.

GDP Per Capita (GDPPC): It reflects the purchasing power of the population of a country. GDPPC should have positive impact on the factoring volume. The result shows positive relationship between GDPPC and Factoring and also significant at world level. The world elasticity is 0.27 at one percent level of significance. It is one percent increase in GDPPC will lead to 0.27 percent increase in factoring services globally. However, the slope dummy for developed countries is negative and statistically significant. This may be due high level of GDPPC in the developed countries. Developed countries are synonymous to high level income countries.

Gross Domestic Saving (GDS): Our expectation is that there should be positive relationship between GDS and factoring business. The result shows the world coefficient value is positive and significant. The value of coefficient is 0.67 percent with one significance level. So, one percent increase in GDS has increased 0.67 percent factoring business globally. However the magnitude of slope dummy of developed countries is positive but not statistically significant.

Consumer Price (Inflation): Inflation leads to curtail fund available for credit facility. Factoring business is depending on overall credit environment of a country. Factoring business is favourably behaving with overall credit environments. So, there should be negative relationship between inflation and factoring service. Overall coefficient is negative and statistically significant. The world coefficient value is -0.24 at one percent level of significance. The result is as per the expectation. However, slope dummy of developed countries is positive and statistically significant. The result shows anomaly for developed countries.

Insurance and Financial Services (Fin_Ser): There should be positive relationship between factoring business and financial services. Overall result is positive and significant at world level. The coefficient value is 0.78 percent and statistically significant. One percent change in financial service has directly impact 0.78 percent in global factoring service. In case of developed countries, the slope dummy is negative and significant. However, net growth of factoring business is positive and the value is 0.12 percent i.e. (0.78 – 0.66). Thus, one percent increases in financial services have to increase 0.12 percent factoring business in developed countries. So, the magnitude of the impact of financial services on factoring service is high at world level than that of developed countries.

Interest payments (IntPay_Rev): If the magnitude of interest payment is increasing, then the clients will switch over towards factoring service for financing of the receivables. So, there should be inverse relationship between interest payment and factoring business. Overall result is negative but significant at world level. The coefficient value is -0.19 percent. The level of significance is one percent.

It means one percent growth in interest payment is leading to 0.19 percent decline globally in factoring business. The slope dummy of developed countries is positive but low magnitude and not statistically significant.

Lending interest rate (Lend_Rate): High lending interest rate in market will discourage the borrowers from taking credit and financing from traditional banking institutions and favourably encouraging the borrowers for taking assets based financing in the form of factoring service. Overall result is positive and significant at world level. The value of coefficient is 0.78 at one percent significance level. It is one percent increase in lending interest rate has directly impact factoring business by 0.78 percent globally. However, the slope dummy of developed countries is negative and significant. The net effect is one percent increase in lending interest rate of developed countries leads to 0.40 (i.e. 0.78 – 0.38) percent increase in factoring volume in developed countries.

Market Capitalization of Listed Domestic Companies (Mkt_Captn): There should be positive relationship between market capitalization of the companies and factoring business service. Overall result is positive but not statistically significant at world level. However, slope dummy of developed countries is positive and magnitude is low. It is one percent increase in market capitalization of domestic companies listed in developed countries lead to increase at the rate of 0.18 percent in factoring service.

Net Domestic Credit (NDC): If the outstanding claims in the form net domestic credit are larger, then the clients will switch over for financing of outstanding receivables claims towards assets based financing i.e. factoring without incurring any extra liabilities. Thus, there should be positive relation between net domestic credit and factoring services. Overall result is positive with low magnitude but not statistically significant. The slope dummy for developed countries is negative and statistically significant.

Real interest rate (Real_Int): Since factoring services and market real interest rate are competitive to each other. If the cost of financing of receivables under factoring service is lower than real interest rate, then the clients will switch over towards factoring service and vice-versa. Thus there should be positive relationship between real rate of interest and factoring business. Overall result is negative with low magnitude but not statistically significant. The magnitude of slope dummy is negligible and also statistically insignificant.

Services: Services include financial and other services. There should be positive relation between factoring and services. Overall result is positive with high magnitude and statistically significant at world level. The world elasticity of services is 1.36 percent at one percent level of significance. It indicates having more than one positive on factoring business. It implies one percent increase in services has increased 1.36 percent of factoring services at world level. Service is most important determinants of factoring service.

Total Reserves includes Gold: With the increase of export of goods and services and export factoring, the foreign reserve of a country will also increase and vice-versa. Thus, there should be positive relation between export factoring and total reserves. The elasticity is positive with low magnitude but not statistically significant at world level. However, the slope dummy of developed countries has negative and statistically significant. This may be due to the proportion of international factoring in total factoring volume is insignificant.

Trade Openness: Trade openness will facilitate international factoring service. Thus, there should be positive relation between trade openness and factoring services. The elasticity of trade openness is positive with high magnitude and statistically significant. The value of elasticity is more than unitary and highest among all the determinants of factoring services. The coefficient value of trade openness is 1.48 percent at one percent level of significance at world level. It means one percent increase in the level

of trade openness and removal of tariff and non-tariff trade barriers leads to 1.48 percent increase in factoring service globally. However, slope dummy of trade openness for developed countries is positive. However, it is not statistically significant.

Table No. 4: Excluded Variables

Particular	Beta In	T	Sig.	Partial Correlation	Collinearity Statistics Tolerance
Dummy_Time	-33.34[a]	-3.572	0.000	-0.121	0.000
D(Trade)	24.070[a]	8.769	0.000	0.287	0.000
D(Service)	10.615[a]	4.139	0.000	0.140	0.000

Source: Author's estimation

Table no. 4 indicates the excluded variables. The SPSS output excluded the variables such as Dummy Time, Dummy Trade and Dummy. It is not considered as relevant variables for the purpose of explaining the factoring services. So, these are not affecting the factoring.

Conclusion

The study focuses on examining the relation between factoring and macro socio-economic variables. Generally, factoring service requires detailed credit information of all customers of sellers. The legal and business environment must facilitate accounts receivables, so that factoring contracts can be enforced in case of default. It is expected that factoring business turnover should be greater in countries having higher levels of economic activity and development and conducive business environment. The study includes various explanatory variables for measurement of impact of economic variables on factoring business.

The most important determinants of factoring services are trade openness, exchange rate and services having elasticity more than unitary respectively. Other important determinants are lending interest rate, financial services, credit to domestic private sector, gross domestic saving and GDP per capita. In case of case of developed countries, we have used slope dummy. The slope dummy of ICT, bank non performing loan, inflation and market capital is positive and statistically significant.

In general, trade openness, exchange rate and service industry are most important determinants of factoring business at world level. The elasticities of the macro economic variables are more than unitary positive change in factoring business.

Scope for Future Research

This study is an attempt to study the impact of macro socio-economic variables on factoring volume. However, there are still scopes for further research:

1. To study linkages between specific credit policies and their resultant impact on factoring

2. To study the impact of long-term change in global credit policy environment on factoring with structural breaks and co-integration test.

3. To study the impact of factoring services on economic development across the countries.

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