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- FIW Spezial Nr. 5 Altomonte C., Foster N., Kneller R., Stöllinger R. "The Trade-Productivity Nexus in the European Economy"
- FIW Kurzbericht Nr. 8 Juni 2012 veröffentlicht
- FIW Working Papers Nr. 77 bis Nr. 98 veröffentlicht

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Das FIW Spezial Nr. 5 kann gratis unter folgendem Link heruntergeladen werden: http://www.fiw.ac.at/index.php?id=684&L=3#c10880

#### FIW-Kurzbericht Nr. 8 - Juni 2012

Das FIW-Projekt veröffentlicht einmal im Quartal einen Kurzbericht über die aktuellen Entwicklungen der internationalen Rahmenbedingungen und des österreichischen Außenhandels.

Der 8. FIW-Kurzbericht Juni 2012 kann gratis unter folgendem Link heruntergeladen werden:

http://www.fiw.ac.at/index.php?id=637&L=0#c10890

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that end, a New Keynesian model with price and wage rigidities is used. The model is estimated with a panel GMM over the period January 2002 - March 2011 on sample of 19 countries. Several findings emerge. First, the output gap is found not to depend on the real interest rate, in accordance with the underdeveloped financial markets in these economies. Second, inflation is found not to depend on the output gap, but on the wage gap, which stresses the relevance of the labour unions for the inflation dynamics in these countries. Third, the labour wedge that arises from the monopolistic competition in the labour market works mainly through the wage gap, not the output gap, in accordance with the high unemployment in these countries. Fourth, monetary policy responded counter-cyclically during the crisis in countries with weak trade unions, differently from countries with strong unions: in crisis times, weak economy drags wages down in low-unionized countries and monetary policy relaxes in these countries, both due to lower wages and due to the weaker economy; on the other hand, strong unions prevent a weak economy to drag wages down in crisis times and central banks in these countries are found not to react to economic activity, prices or wages. Fifth, the fixed exchange rate is found to restrain monetary policy in times of crisis, too - in countries with flexible exchange rates, monetary policy during the crisis responds to movements in output gap and reserves, in contrast to countries with fixed exchange rate, where monetary policy does not respond to any domestic macroeconomic variable.

### WP Nr. 82: Markus Alzer and Ramin Dadasov: "Financial Liberalization and Institutional Development"

This paper empirically analyzes the effects of de jure financial openness on institutional quality as captured by indicators on investment risk, corruption level, impartiality of judiciary system as well as the effectiveness of bureaucratic authorities. Using a panel data set of more than 110 countries and a time span from 1984 to 2005, we show that a higher degree of financial openness improves institutional quality in particular by reducing investment risks. We also study the effect of a single liberalization reform on the development of institutional quality. Again, we find evidence for the beneficial impact of financial liberalization with the exception of the level of corruption. We additionally show that if financial liberalization is supported by simultaneous political liberalization, the benign consequences of financial opening for the institutional performance are even larger, while financial deregulation in former socialist countries tends to worsen institutional quality.

# WP Nr. 83: Elizabeth Jane Casabianca: "Distributional effects of preferential and multilateral trade liberalization: the case of Paraguay"

In this paper I apply Porto (2006) to Paraguay using household level data. The aim is to assess the distributional impact of the preferential and multilateral trade liberalization in a small member country. I also follow Nicita (2009) assuming incomplete pass-through on prices of traded goods which in turn influence both household consumption and earnings of household members in the labour market. I estimate these effects highlighting the difference between the impact of the preferential trade agreement and the multilateral one. Finally, I am able to depict if and who trade integration has benefited.

# WP Nr. 84: Christian Dreger and Dierk Herzer: "A further examination of the export-led growth hypothesis"

This paper challenges the common view that exports generally contribute more to GDP growth than a pure change in export volume, as the export-led growth hypothesis predicts. Applying panel cointegration techniques to a production function with non-export GDP as the dependent variable, we find for a sample of 45 developing countries that: (i) exports have a positive short-run effect on non-export GDP and vice versa (short-run bidirectional causality), (ii) the long-run effect of exports on non-export output, however, is negative on average, but (iii) there are large differences in the long-run effect of exports on non-export GDP across countries. Cross-sectional regressions indicate that these cross-country differences in the long-run effect of exports on non-export GDP are significantly negatively related to cross-country differences in primary export dependence and business and labor market regulation. In contrast, there is no significant association between the growth effect of exports and the capacity of a country to absorb new knowledge.

# WP Nr. 85: Barbara Dluhosch and Daniel Horgos: "(When) Does Tit-for-Tat Diplomacy in Trade Policy Pay Off?"

In international relations, short-run incentives for non-cooperation often dominate. Yet, (external) institutions for enforcing cooperation are hampered by national sovereignty, supposedly strengthening the role of selfenforcing mechanisms. This paper examines their scope with a focus on contingent protection aka tit-for-tat in trade policy. By highlighting various strategies in a (linear) partial-equilibrium framework, we show that retaliation of non-cooperative behavior by limiting market access works as a disciplining device independently of supply and demand parameters. Our theoretical results are backed by

empirical evidence that countries more frequently involved in WTO-mediated disputes entailing tit-fortat strategies pursue on average more liberal trade regimes.

# WP Nr. 86: Agnieszka Gehringer: "Financial liberalization, growth, productivity and capital accumulation: The case of European integration"

In the present contribution, we concentrate on the process of financial liberalization in a specific context of European economic and monetary integration. We implement de facto and de jure measures of financial liberalization and find that formal aspects of financial openness generate a strongly positive impact on economic growth and its sources, productivity growth and capital accumulation. Moreover, there is evidence of a positive contribution to the process stemming from the EU membership, while no substantial effect comes from the euro adoption. Finally, we investigate the effects from financial integration on country groups within the EU.

#### WP Nr. 87: Erik van der Marel: "Determinants of Comparative Advantage in Services"

This paper analyzes whether and to what extent determinants of comparative advantage have explanatory power for conventional services trade. It assesses the geographical, Heckscher-Ohlin and institutional determinants of services trade based on the literature for goods trade. Moreover, this paper investigates the importance of a country's governance of regulation as a source of comparative advantage in services markets. Determinants for services trade differ from goods. Services trade is more sensitive to a country's stock of high-skilled and mid-skilled labour, more receptive to the level of trust enjoyed by any importers, and more dependant on the quality of regulatory governance practiced when liberalizing services sectors. The counterfactual analyses presented in this paper show furthermore that these factors when affected by policy can bring substantial gains to countries. Specifically, countries with already good regulatory governance structures would enjoy relatively higher growth share in services trade by capitalizing on their high-skilled stock. Other countries, however, would instead to better by improving their condition of regulatory governance.

### WP Nr. 88: Swati Dhingra and John Morrow: "The Impact of Integration on Productivity and Welfare Distortions Under Monopolistic Competition"

A fundamental question in monopolistic competition theory is whether the market allocates resources efficiently. This paper generalizes the Spence-Dixit-Stiglitz framework to heterogeneous firms, addressing when the market provides optimal quantities, variety and productivity. Under constant elasticity of demand, each firm prices above its average cost, yet we show market allocations are efficient. When demand elasticities vary, market allocations are not efficient and reflect the distortions of imperfect competition. After determining the nature of market distortions, we investigate how integration may serve as a remedy to imperfect competition. Both market distortions and the impact of integration depend on two demand side elasticities, and we suggest richer demand structures to pin down these elasticities. We also show that integration eliminates distortions, provided the post-integration market is sufficiently large.

### WP Nr. 89: Harald Fadinger and Karin Mayr: "Skill-biased technological change, unemployment and brain drain"

We develop a model of directed technological change, frictional unemployment and migration to examine the effects of a change in skill endowments on wages, employment rates and emigration rates of skilled and unskilled workers. We find that, depending on the elasticity of substitution between skilled and unskilled workers and the elasticity of the matching function, an increase in the skill ratio can reduce the relative unemployment rate of skilled workers and decrease the relative emigration rate of skilled workers (brain drain). We provide empirical estimates and simulations to support our findings and show that effects are empirically relevant and potentially sizeable.

### WP Nr. 90: Elisabeth Christen: "Time zones matter: The impact of distance and time zones on services trade"

Using distance and time zone differences as a measure for coordination costs between service suppliers and consumers, we employ a Hausman-Taylor model for services trade by foreign affiliates. Given the need for proximity in the provision of services, factors like distance place a higher cost burden on the delivery of services in foreign markets. In addition, differences in time zones add significantly to the cost of doing business abroad. By decomposing the impact of distance into a longitudinal and latitudinal component and accounting for differences in time zones, we can identify in detail the factors driving the impact of increasing coordination costs on the delivery of services through foreign affiliates. Working with a bilateral U.S. data set on foreign affiliate sales in services we examine the impact of time zone differences and East-West and North-South distance on U.S. outward affiliate sales. We find that both dis-

tance as well as time zone differences have a significant positive effect on foreign affiliate sales. By decomposing the effect of distance our results show that increasing East-West or North-South distance by 100 kilometers raises affiliates sales by 2%. Finally, focusing on time zone differences our findings suggest that affiliate sales increase the more time zones we have to overcome.

# WP Nr. 91: Richard Frensch, Jan Hanousek, Evžen Kočenda: "Incomplete specialization and offshoring across Europe"

Recent empirical studies have been searching for evidence on and driving forces for offshoring. Frequently, this has been done by analyzing gross trade flows related to offshore activities using gravity equations augmented by ad hoc measures of supply-side country differences. This paper suggests that gravity formulations of this sort are mis-specified, due to theoretically unmotivated attempts to allow for both complete and incomplete specialization influences on gross trade flows within the same gravity framework. We suggest an alternative specification rooted in incomplete specialization that views bilateral gravity equations as statistical relationships constrained on countries' multilateral specialization patterns. This view reveals that countries' multilateral specialization incentives drive bilateral trade, corresponding to and competing with the role of multilateral trade resistance. Our results support evidence for offshoring activities across Europe, driven by countries' multilateral specialization incentives, as expressed by supply-side country differences relative to the rest of the world.

## WP Nr. 92: Marco de Pinto: "Unemployment Benefits as Redistribution Scheme of Trade Gains - a Positive Analysis"

Trade liberalization is no Pareto-improvement - there are winners (high-skilled) and losers (low-skilled). To compensate the losers the government is assumed to introduce unemployment benefits (UB). These benefits are financed by either a wage tax, a payroll tax, or a profit tax. Using a Melitz-type model of international trade with unionized labor markets and heterogeneous workers we show that: (i) there is a threshold level of UB where all trade gains are destroyed, (ii) this threshold differs between different kind of taxes, (iii) there is a clearcut ranking in terms of welfare for the chosen funding of the UB: 1. wage tax, 2. profit tax, 3. Payroll tax.

#### WP Nr. 93: Franz Hubert and Onur Cobanli: "Pipeline Power"

We use cooperative game theory to analyze the strategic impact of three controversial pipeline projects. Two of them, Nord Stream and South Stream, allow Russian gas to bypass transit countries, Ukraine and Belarus. Nord Stream's strategic value turns out to be huge, justifying the high investment cost for Germany and Russia. The additional leverage obtained through South Stream, in contrast, appears small. The third project, Nabucco, aims at diversifying Europe's gas imports by accessing producers in Middle East and Central Asia. The project has a large potential to curtail Russia's power, but the benefits accrue mainly to Turkey, while the gains for the EU are negligible.

### WP Nr. 94: Aliya Algozhina: "Monetary and Fiscal Policy Interactions in an Emerging Open Economy Exposed to Sudden Stops Shock: A DSGE Approach"

The monetary and fiscal policy interactions have gained a new research interest after the 2008 crisis due to the global increase of fiscal debt. This paper constructs a macroeconomic model of joint fiscal and monetary policy for an emerging open economy taking into account its structural uniqueness. In particular, the two instruments of monetary policy, interest rate and foreign exchange intervention; the two instruments of fiscal policy, government consumption and government investment; and a sudden stops shock through the collateral constraint of foreign borrowings are modeled here in a single DSGE framework. The parameters are calibrated for the case of Hungary using data over 1995Q1-2011Q3. The impulse response functions show that government consumption is unproductive and increases fiscal debt as opposed to government investment, foreign exchange intervention positively affects net exports but does not stimulate an economy per se causing inflation, and a negative shock to the upper bound of leverage ratio in the collateral constraint of foreign borrowings generates a sudden stops crisis for the emerging world. Monetary and fiscal policy intimately interact in the short and medium run such that there is an immediate response of monetary instruments to fiscal shocks, while fiscal instruments adjust to monetary shocks in the medium run.

### WP Nr. 95: Elizaveta Archanskaia and Guillaume Daudin: "Heterogeneity and the Distance Puzzle"

This paper shows that reduced heterogeneity of exporter-specific goods can provide a direct explanation of the distance puzzle. Using COMTRADE 4-digit bilateral trade data we find that the elasticity of trade to distance has increased by 8% from 1962 to 2009. Theoretical foundations of the gravity equation indicate that the distance coefficient is the product of the elasticity of trade costs to distance and

a measure of heterogeneity, e.g. the substitution elasticity between exporter-specific goods in the Armington framework. This parameter has increased by at least 12-29% from 1962 to 2009. The evolution of the distance coefficient is thus compatible with a 4-16% reduction in the elasticity of trade costs to distance.

### WP Nr. 96: Christian Schitter, Maria Silgoner, Katharina Steiner und Julia Wörz: "Fishing in the same pool: Export strengths and competitiveness of China and CESEE at the EU-15 Market"

We investigate the impact of the emergence of China as a global competitor on the trade performance of Central, Eastern and Southeastern European (CESEE) countries at the EU-15 market. The paper takes a comprehensive approach in terms of empirical methods and data. We analyze export growth, export market shares, extensive and intensive margins and the number of trade links, applying highly disaggregated data at the 6 digit HS level over the period 1995 - 2010. We show that the most contested markets are those for capital goods and transport equipment, product categories where both regions have gained market shares and comparative advantage. We show that the number of trade links at the product level where both regions are active has increased substantially, indicating intensified competition. At the same time hardly any trade links were lost, which points against cut-throat competition between CESEE and China. The decomposition of export growth along the extensive versus the intensive margin shows that in line with the literature, the deepening of already existing trade relationships (i.e. the intensive margin) contributed most strongly export growth in both regions, whereas the contribution of new trade links (i.e. the extensive margin) had only a minor contribution, apart from the instance of EU accession which boosted the extensive margin considerably. We further decompose intensive margin growth into demand related structural effects and a supplier related competitiveness effect. Both the CESEE region and China successfully intensified their trade linkages above all as a result of their outstanding competitiveness as shown by the econometric shift-share analysis. While this suggests that both regions pursue a able export strategy, further diversification of production towards promising new industries and markets will become increasingly crucial for both, especially in face of projected slower EU-15 market growth in the longer run.

#### WP Nr. 97: Martin Berger und Heinz Hollenstein: "Determinants of Equity-based and Cooperative Foreign R&D and Impact on the Parent Firm's Performance"

The paper complements entry mode research by dealing with the choice of alternative modes of governance in the specific case of foreign R&D and its impact on a parent firm's performance. Firstly, we identify the factors that determine whether a firm locates abroad any R&D activities, and, if it does so, whether it chooses an equity-based rather than a non-equity co-operative mode of governance. The OLI paradigm is used as theoretical background of this analysis. Secondly, we determine the impact of foreign R&D on a parent firm's performance in terms of innovation output and labour productivity, and investigate whether this effect differs among firms using the one or the other governance mode. The study is based on separate estimations for Switzerland and Austria using comparable firm data and model specifications. The two countries are interesting cases as they strongly differ in terms of level and pattern of internationalization.

### WP Nr. 98: Nikolaos Antonakakis und Harald Badinger: "Output Volatility, Economic Growth, and Cross-Country Spillovers: New Evidence for the G7 Countries"

This paper considers the linkages between output growth and output volatility for the sample of G7 countries over the period 1958M2-2011M7, thereby paying particular attention to spillovers within and between countries. Using the VAR-based spillover index approach by Diebold and Yilmaz (2012), we identify several empirical regularities: i) output growth and volatility are highly intertwined, with spillovers taking place into all four directions; ii) the importance of spillovers has increased after the mid 1980s and reached unprecedented levels during the recent financial and economic crisis; iii) the US has been the largest transmitter of output and volatility shocks to other countries. Generalized impulse response analyses point to moderate growth-growth spillovers and sizable volatility-volatility spillovers across countries, suggesting that volatility shocks quintuplicate in the long run. The cross-variable effects turn out negative: volatility shocks lead to lower economic growth, growth shocks tend to reduce output volatility. Our findings underline the increased vulnerability of the G7 countries to destabilizing shocks and their detrimental effects on economic growth, which are sizeably amplified through international spillover effects and the associated repercussions.

Mit freundlichen Grüßen.

Pia Kranawetter Björn Rabethge (FIW - Projektbüro)

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#### FIW Note No. 8 - June 2012

FIW publishes quarterly FIW Notes. They present an overview of the most important Austrian and international developments regarding International Economics. FIW Note No. 8 is available at:

http://www.fiw.ac.at/index.php?id=637&L=3#c10891

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New Working Papers have been published and are now available for download. <a href="http://www.fiw.ac.at/index.php?id=545&L=3">http://www.fiw.ac.at/index.php?id=545&L=3</a>

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The objective of this paper is to assess whether the level of unionization and the rigidity of the exchange rate affected wages and monetary policy in SEE and CIS during the ongoing economic crisis. Towards that end, a New Keynesian model with price and wage rigidities is used. The model is estimated with a panel GMM over the period January 2002 - March 2011 on sample of 19 countries. Several findings emerge. First, the output gap is found not to depend on the real interest rate, in accordance with the underdeveloped financial markets in these economies. Second, inflation is found not to depend on the output gap, but on the wage gap, which stresses the relevance of the labour unions for the inflation dynamics in these countries. Third, the labour wedge that arises from the monopolistic competition in the labour market works mainly through the wage gap, not the output gap, in accordance with the high unemployment in these countries. Fourth, monetary policy responded counter-cyclically during the crisis in countries with weak trade unions, differently from countries with strong unions: in crisis times, weak economy drags wages down in low-unionized countries and monetary policy relaxes in these countries, both due to lower wages and due to the weaker economy; on the other hand, strong unions prevent a weak economy to drag wages down in crisis times and central banks in these countries are found not to react to economic activity, prices or wages. Fifth, the fixed exchange rate is found to restrain monetary policy in times of crisis, too – in countries with flexible exchange rates, monetary policy during the crisis responds to movements in output gap and reserves, in contrast to countries with fixed exchange rate, where monetary policy does not respond to any domestic macroeconomic variable.

### WP Nr. 82: Markus Alzer and Ramin Dadasov: "Financial Liberalization and Institutional Development"

This paper empirically analyzes the effects of de jure financial openness on institutional quality as captured by indicators on investment risk, corruption level, impartiality of judiciary system as well as the effectiveness of bureaucratic authorities. Using a panel data set of more than 110 countries and a time span from 1984 to 2005, we show that a higher degree of financial openness improves institutional quality in particular by reducing investment risks. We also study the effect of a single liberalization reform on the development of institutional quality. Again, we find evidence for the beneficial impact of financial liberalization with the exception of the level of corruption. We additionally show that if financial liberalization is supported by simultaneous political liberalization, the benign consequences of financial opening for the institutional performance are even larger, while financial deregulation in former socialist countries tends to worsen institutional quality.

# WP Nr. 83: Elizabeth Jane Casabianca: "Distributional effects of preferential and multilateral trade liberalization: the case of Paraguay"

In this paper I apply Porto (2006) to Paraguay using household level data. The aim is to assess the distributional impact of the preferential and multilateral trade liberalization in a small member country. I also follow Nicita (2009) assuming incomplete pass-through on prices of traded goods which in turn influence both household consumption and earnings of household members in the labour market. I estimate these effects highlighting the difference between the impact of the preferential trade agreement and the multilateral one. Finally, I am able to depict if and who trade integration has benefited.

### WP Nr. 84: Christian Dreger and Dierk Herzer: "A further examination of the export-led growth hypothesis"

This paper challenges the common view that exports generally contribute more to GDP growth than a pure change in export volume, as the export-led growth hypothesis predicts. Applying panel cointegration techniques to a production function with non-export GDP as the dependent variable, we find for a sample of 45 developing countries that: (i) exports have a positive short-run effect on non-export GDP and vice versa (short-run bidirectional causality), (ii) the long-run effect of exports on non-export output, however, is negative on average, but (iii) there are large differences in the long-run effect of exports on non-export GDP across countries. Cross-sectional regressions indicate that these cross-country differences in the long-run effect of exports on non-export GDP are significantly negatively related to cross-country differences in primary export dependence and business and labor market regulation. In contrast, there is no significant association between the growth effect of exports and the capacity of a country to absorb new knowledge.

# WP Nr. 85: Barbara Dluhosch and Daniel Horgos: "(When) Does Tit-for-Tat Diplomacy in Trade Policy Pay Off?"

In international relations, short-run incentives for non-cooperation often dominate. Yet, (external) institutions for enforcing cooperation are hampered by national sovereignty, supposedly strengthening the

role of selfenforcing mechanisms. This paper examines their scope with a focus on contingent protection aka tit-for-tat in trade policy. By highlighting various strategies in a (linear) partial-equilibrium framework, we show that retaliation of non-cooperative behavior by limiting market access works as a disciplining device independently of supply and demand parameters. Our theoretical results are backed by empirical evidence that countries more frequently involved in WTO-mediated disputes entailing tit-fortat strategies pursue on average more liberal trade regimes.

## WP Nr. 86: Agnieszka Gehringer: "Financial liberalization, growth, productivity and capital accumulation: The case of European integration"

In the present contribution, we concentrate on the process of financial liberalization in a specific context of European economic and monetary integration. We implement de facto and de jure measures of financial liberalization and find that formal aspects of financial openness generate a strongly positive impact on economic growth and its sources, productivity growth and capital accumulation. Moreover, there is evidence of a positive contribution to the process stemming from the EU membership, while no substantial effect comes from the euro adoption. Finally, we investigate the effects from financial integration on country groups within the EU.

#### WP Nr. 87: Erik van der Marel: "Determinants of Comparative Advantage in Services"

This paper analyzes whether and to what extent determinants of comparative advantage have explanatory power for conventional services trade. It assesses the geographical, Heckscher-Ohlin and institutional determinants of services trade based on the literature for goods trade. Moreover, this paper investigates the importance of a country's governance of regulation as a source of comparative advantage in services markets. Determinants for services trade differ from goods. Services trade is more sensitive to a country's stock of high-skilled and mid-skilled labour, more receptive to the level of trust enjoyed by any importers, and more dependant on the quality of regulatory governance practiced when liberalizing services sectors. The counterfactual analyses presented in this paper show furthermore that these factors when affected by policy can bring substantial gains to countries. Specifically, countries with already good regulatory governance structures would enjoy relatively higher growth share in services trade by capitalizing on their high-skilled stock. Other countries, however, would instead to better by improving their condition of regulatory governance.

## WP Nr. 88: Swati Dhingra and John Morrow: "The Impact of Integration on Productivity and Welfare Distortions Under Monopolistic Competition"

A fundamental question in monopolistic competition theory is whether the market allocates resources efficiently. This paper generalizes the Spence-Dixit-Stiglitz framework to heterogeneous firms, addressing when the market provides optimal quantities, variety and productivity. Under constant elasticity of demand, each firm prices above its average cost, yet we show market allocations are efficient. When demand elasticities vary, market allocations are not efficient and reflect the distortions of imperfect competition. After determining the nature of market distortions, we investigate how integration may serve as a remedy to imperfect competition. Both market distortions and the impact of integration depend on two demand side elasticities, and we suggest richer demand structures to pin down these elasticities. We also show that integration eliminates distortions, provided the post-integration market is sufficiently large.

### WP Nr. 89: Harald Fadinger and Karin Mayr: "Skill-biased technological change, unemployment and brain drain"

We develop a model of directed technological change, frictional unemployment and migration to examine the effects of a change in skill endowments on wages, employment rates and emigration rates of skilled and unskilled workers. We find that, depending on the elasticity of substitution between skilled and unskilled workers and the elasticity of the matching function, an increase in the skill ratio can reduce the relative unemployment rate of skilled workers and decrease the relative emigration rate of skilled workers (brain drain). We provide empirical estimates and simulations to support our findings and show that effects are empirically relevant and potentially sizeable.

### WP Nr. 90: Elisabeth Christen: "Time zones matter: The impact of distance and time zones on services trade"

Using distance and time zone differences as a measure for coordination costs between service suppliers and consumers, we employ a Hausman-Taylor model for services trade by foreign affiliates. Given the need for proximity in the provision of services, factors like distance place a higher cost burden on the delivery of services in foreign markets. In addition, differences in time zones add significantly to the cost of doing business abroad. By decomposing the impact of distance into a longitudinal and latitudinal

component and accounting for differences in time zones, we can identify in detail the factors driving the impact of increasing coordination costs on the delivery of services through foreign affiliates. Working with a bilateral U.S. data set on foreign affiliate sales in services we examine the impact of time zone differences and East-West and North-South distance on U.S. outward affiliate sales. We find that both distance as well as time zone differences have a significant positive effect on foreign affiliate sales. By decomposing the effect of distance our results show that increasing East-West or North-South distance by 100 kilometers raises affiliates sales by 2%. Finally, focusing on time zone differences our findings suggest that affiliate sales increase the more time zones we have to overcome.

# WP Nr. 91: Richard Frensch, Jan Hanousek, Evžen Kočenda: "Incomplete specialization and offshoring across Europe"

Recent empirical studies have been searching for evidence on and driving forces for offshoring. Frequently, this has been done by analyzing gross trade flows related to offshore activities using gravity equations augmented by ad hoc measures of supply-side country differences. This paper suggests that gravity formulations of this sort are mis-specified, due to theoretically unmotivated attempts to allow for both complete and incomplete specialization influences on gross trade flows within the same gravity framework. We suggest an alternative specification rooted in incomplete specialization that views bilateral gravity equations as statistical relationships constrained on countries' multilateral specialization patterns. This view reveals that countries' multilateral specialization incentives drive bilateral trade, corresponding to and competing with the role of multilateral trade resistance. Our results support evidence for offshoring activities across Europe, driven by countries' multilateral specialization incentives, as expressed by supply-side country differences relative to the rest of the world.

### WP Nr. 92: Marco de Pinto: "Unemployment Benefits as Redistribution Scheme of Trade Gains - a Positive Analysis"

Trade liberalization is no Pareto-improvement - there are winners (high-skilled) and losers (low-skilled). To compensate the losers the government is assumed to introduce unemployment benefits (UB). These benefits are financed by either a wage tax, a payroll tax, or a profit tax. Using a Melitz-type model of international trade with unionized labor markets and heterogeneous workers we show that: (i) there is a threshold level of UB where all trade gains are destroyed, (ii) this threshold differs between different kind of taxes, (iii) there is a clearcut ranking in terms of welfare for the chosen funding of the UB: 1. wage tax, 2. profit tax, 3. Payroll tax.

#### WP Nr. 93: Franz Hubert and Onur Cobanli: "Pipeline Power"

We use cooperative game theory to analyze the strategic impact of three controversial pipeline projects. Two of them, Nord Stream and South Stream, allow Russian gas to bypass transit countries, Ukraine and Belarus. Nord Stream's strategic value turns out to be huge, justifying the high investment cost for Germany and Russia. The additional leverage obtained through South Stream, in contrast, appears small. The third project, Nabucco, aims at diversifying Europe's gas imports by accessing producers in Middle East and Central Asia. The project has a large potential to curtail Russia's power, but the benefits accrue mainly to Turkey, while the gains for the EU are negligible.

### WP Nr. 94: Aliya Algozhina: "Monetary and Fiscal Policy Interactions in an Emerging Open Economy Exposed to Sudden Stops Shock: A DSGE Approach"

The monetary and fiscal policy interactions have gained a new research interest after the 2008 crisis due to the global increase of fiscal debt. This paper constructs a macroeconomic model of joint fiscal and monetary policy for an emerging open economy taking into account its structural uniqueness. In particular, the two instruments of monetary policy, interest rate and foreign exchange intervention; the two instruments of fiscal policy, government consumption and government investment; and a sudden stops shock through the collateral constraint of foreign borrowings are modeled here in a single DSGE framework. The parameters are calibrated for the case of Hungary using data over 1995Q1-2011Q3. The impulse response functions show that government consumption is unproductive and increases fiscal debt as opposed to government investment, foreign exchange intervention positively affects net exports but does not stimulate an economy per se causing inflation, and a negative shock to the upper bound of leverage ratio in the collateral constraint of foreign borrowings generates a sudden stops crisis for the emerging world. Monetary and fiscal policy intimately interact in the short and medium run such that there is an immediate response of monetary instruments to fiscal shocks, while fiscal instruments adjust to monetary shocks in the medium run.

## WP Nr. 95: Elizaveta Archanskaia and Guillaume Daudin: "Heterogeneity and the Distance Puzzle"

This paper shows that reduced heterogeneity of exporter-specific goods can provide a direct explanation of the distance puzzle. Using COMTRADE 4-digit bilateral trade data we find that the elasticity of trade to distance has increased by 8% from 1962 to 2009. Theoretical foundations of the gravity equation indicate that the distance coefficient is the product of the elasticity of trade costs to distance and a measure of heterogeneity, e.g. the substitution elasticity between exporter-specific goods in the Armington framework. This parameter has increased by at least 12-29% from 1962 to 2009. The evolution of the distance coefficient is thus compatible with a 4-16% reduction in the elasticity of trade costs to distance.

## WP Nr. 96: Christian Schitter, Maria Silgoner, Katharina Steiner und Julia Wörz: "Fishing in the same pool: Export strengths and competitiveness of China and CESEE at the EU-15 Market"

We investigate the impact of the emergence of China as a global competitor on the trade performance of Central, Eastern and Southeastern European (CESEE) countries at the EU-15 market. The paper takes a comprehensive approach in terms of empirical methods and data. We analyze export growth, export market shares, extensive and intensive margins and the number of trade links, applying highly disaggregated data at the 6 digit HS level over the period 1995 - 2010. We show that the most contested markets are those for capital goods and transport equipment, product categories where both regions have gained market shares and comparative advantage. We show that the number of trade links at the product level where both regions are active has increased substantially, indicating intensified competition. At the same time hardly any trade links were lost, which points against cut-throat competition between CESEE and China. The decomposition of export growth along the extensive versus the intensive margin shows that in line with the literature, the deepening of already existing trade relationships (i.e. the intensive margin) contributed most strongly export growth in both regions, whereas the contribution of new trade links (i.e. the extensive margin) had only a minor contribution, apart from the instance of EU accession which boosted the extensive margin considerably. We further decompose intensive margin growth into demand related structural effects and a supplier related competitiveness effect. Both the CESEE region and China successfully intensified their trade linkages above all as a result of their outstanding competitiveness as shown by the econometric shift-share analysis. While this suggests that both regions pursue a able export strategy, further diversification of production towards promising new industries and markets will become increasingly crucial for both, especially in face of projected slower EU-15 market growth in the longer run.

# WP Nr. 97: Martin Berger und Heinz Hollenstein: "Determinants of Equity-based and Cooperative Foreign R&D and Impact on the Parent Firm's Performance"

The paper complements entry mode research by dealing with the choice of alternative modes of governance in the specific case of foreign R&D and its impact on a parent firm's performance. Firstly, we identify the factors that determine whether a firm locates abroad any R&D activities, and, if it does so, whether it chooses an equity-based rather than a non-equity co-operative mode of governance. The OLI paradigm is used as theoretical background of this analysis. Secondly, we determine the impact of foreign R&D on a parent firm's performance in terms of innovation output and labour productivity, and investigate whether this effect differs among firms using the one or the other governance mode. The study is based on separate estimations for Switzerland and Austria using comparable firm data and model specifications. The two countries are interesting cases as they strongly differ in terms of level and pattern of internationalization.

# WP Nr. 98: Nikolaos Antonakakis und Harald Badinger: "Output Volatility, Economic Growth, and Cross-Country Spillovers: New Evidence for the G7 Countries"

This paper considers the linkages between output growth and output volatility for the sample of G7 countries over the period 1958M2-2011M7, thereby paying particular attention to spillovers within and between countries. Using the VAR-based spillover index approach by Diebold and Yilmaz (2012), we identify several empirical regularities: i) output growth and volatility are highly intertwined, with spillovers taking place into all four directions; ii) the importance of spillovers has increased after the mid 1980s and reached unprecedented levels during the recent financial and economic crisis; iii) the US has been the largest transmitter of output and volatility shocks to other countries. Generalized impulse response analyses point to moderate growth-growth spillovers and sizable volatility-volatility spillovers across countries, suggesting that volatility shocks quintuplicate in the long run. The cross-variable effects turn out negative: volatility shocks lead to lower economic growth, growth shocks tend to reduce output volatility. Our findings underline the increased vulnerability of the G7 countries to destabilizing shocks and their detrimental effects on economic growth, which are sizeably amplified through international spillover effects and the associated repercussions.

Kind regards

Pia Kranwetter Björn Rabethge (FIW Project Office)

FIW - A collaboration of WIFO, wiiw and WSR
In the framework of the Austrian Federal Government's "Internationalisation Drive"