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ABSTRACT

Institutional environment and monetary transmission in the euro area: a cross-country view

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This paper provides a brief overview of the main issues at stake related to institutional structure and monetary transmission in Europe. We argue that differences in institutional arrangements, both economic and legal, are potential causes of differences in monetary transmission mechanisms among European countries. Moreover, the paper provides circumstantial evidence that in the (near) future financial structures and institutions in the Eurosystem, and hence monetary transmission mechanisms, will converge further. Institutional structures related to anti-inflationary policy stance of the European Central Bank may therefore result in a more US-style financial structure, but differences related to legal and economic structures are sticky and will, for the time being, remain.

Key words: monetary policy transmission, institutional structure, EU member states

JEL codes: E52, G20

SAMENVATTING

Institutionele omgeving en monetaire transmissie in het eurogebied: een vergelijkende landen visie

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Het paper geeft een beknopt overzicht van de voornaamste vraagstukken omtrent institutionele structuur en monetaire transmissie in Europa. We beargumenteren dat verschillen in institutionele regelingen, zowel economisch als wettelijk, potentiële oorzaken zijn van verschillen in monetaire transmissie tussen Europese landen. Bovendien bevat het paper indirect bewijs dat in de (nabije) toekomst financiële structuren en instituties in het Eurosysteem, en daardoor monetaire transmissiemechanismen, verder zullen convergeren. Institutionele financiële structuren, in zoverre gerelateerd aan het anti-inflatie beleid van de Europese centrale bank, zullen meer gaan lijken op die van de Verenigde Staten, maar verschillen in wettelijke en economische structuren zijn hardnekkig en zullen, althans voorlopig, blijven bestaan.

Trefwoorden: monetaire transmissie, institutionele structuur, EU lidstaten

JEL codes: E52, G20

1 INTRODUCTION

Much of the debate about Economic and Monetary Union (EMU) has focused on costs and benefits, for example in the context of optimal currency area analyses in the tradition of economic Nobel price winner 1999 Robert A. Mundell. However, the present paper looks at EMU from a different perspective, viz. the importance of domestic institutional arrangements for the strength of monetary policy transmission across the countries of the euro area. Often monetary policy is a powerful tool, but not independent of the domestic institutional arrangements in particular countries. Sometimes, however, this policy instrument has unexpected or undesired consequences which differ over time and place. Thus, to be successful in conducting monetary policy, the monetary authorities must have an accurate assessment of the timing and effect of their policies on the economy. This requires knowledge of the transmission mechanisms through which monetary policy affects the economy. Among the many challenges facing the new Eurosystem is the likelihood that countries will respond differently to changes in monetary conditions because monetary institutions and traditions differ among member states. Therefore, an understanding of the linkages between national institutional arrangements and the response to area wide monetary policy shocks is highly desirable and useful. This article provides a brief overview of the main issues at stake related to institutional structure and monetary transmission in Europe. We argue that differences in institutional arrangements, both economic and legal, are potential causes of differences in monetary transmission mechanisms among European countries. Moreover, the present paper provides circumstantial evidence that in the (near) future financial structures and institutions in the Eurosystem, and hence monetary transmission mechanisms, will converge further. Institutional financial structures related to the anti-inflationary policy stance of the European Central Bank (ECB) may therefore result in a more US-style financial structure, but differences related to legal and economic structures are sticky and will, for the time being, remain ¹.

The main message of this article is twofold. The first is our main contention that institutional arrangements among countries matter for the monetary transmission process in the Euro area. The second is our suspicion, supported by comparative statistical evidence, that financial behaviour will converge across European countries. Section 1 provides a brief survey of the main monetary transmission channels as set out in literature, by way of a theoretical benchmark. Section 2 takes a closer look at differences in institutional structure. Therefore we consider the economic and financial structure across the EMU countries Germany, France, Italy, Belgium and the Netherlands. We further

¹ For further documentation and empirical detail the reader may wish to consult e.g. Britton and Whitley 1997, De Bondt 1999; Dornbusch et al. 1998; ECB 1999; Fase 1998 and 1999, Kashyap and Stein 1997; Kiefer and Saarenheimo 1998; OECD 1998.

look at the United Kingdom (UK), which is one of the European Union (EU) countries that is still outside EMU. This enables us to supplement our examination with some comparative analysis. Section 3 assesses the main findings of the available and our own empirical studies relating institutional structure to the monetary transmission process across countries, providing econometric and institutional evidence to draw some policy conclusions. Section 4 addresses the rather speculative issue whether institutional structures and monetary transmission mechanisms in the Eurosystem are converging or not. Our conjecture is that comparative examination across countries including the United States (US) suggests they do as matter of fact. The paper ends with some concluding remarks, relevant for monetary policy of the ECB.

2 MONETARY TRANSMISSION CHANNELS: THE THEORY

Broadly defined, monetary transmission refers to the impact of monetary variables such as money supply, interest rates, exchange rates and credit on economic activity². The traditional view is that an increase of the money stock has a direct effect on output, for example, through a surplus of cash balances, which encourages an increase in spending on goods and services. In addition the money stock may affect the real sector of the economy also through one or more other intermediate monetary variables. Two views seem to be dominant, viz the money view and the credit view. In the *money view*, for instance, easier monetary conditions result in lower interest rates, which in turn may enhance investment or durable consumption and thus economic activity. Monetary policy notably also has a direct influence on interest rates. The central bank's interest rates determine the rates charged by banks and other financial intermediaries. Interest rate changes are passed on to the real economy along five channels (well-known from textbooks on money and banking): the cost of capital, substitution, income and wealth effects, and exchange rates (e.g. Mishkin 1996). Of course the exchange rate is determined not only by interest rates but also by monetary policy or external shocks. In such a situation, the exchange rate is considered another transmission variable. The same goes for financial wealth insofar as changes are brought about not by interest rate changes, but by autonomous shocks.

Apart from the money stock and interest and exchange rates, the availability of external finance from banks and non-bank financial intermediaries has a potential impact on output. Unlike the traditional interest rate mechanism, the *credit view* - i.e. the credit channel approach - asserts, assuming imperfect financial markets, that financial structure plays an additional role in the monetary transmission process. The credit channel mechanism focuses on financial market imperfections as a vital element of propagation and amplification of an initial monetary policy shock (Bernanke and Blinder, 1988; De Bondt, 1999). This phenomenon is known as the financial accelerator effect. Frictions in credit markets may create imperfect substitutability between different sources of financing. The cost spread between self-financing and credit, the so-called external finance premium, reflects the cost due to these financial imperfections. According to the credit channel approach any shock to the external finance premium affects borrowers' decisions, and therefore influences their productive activities. The external finance premium is affected by monetary policy through the balance sheet and bank lending channel. The balance sheet channel emphasizes the potential impact of monetary shocks on borrowers' balance sheet positions or net worth. The hypothesis is that any shock affecting borrowers' financial position modifies the external finance premium and consequently the overall terms of credit for borrowers. The bank lending channel assumes two key propositions: viz.

² Apart from these channels, expectations and uncertainty play a role in the monetary transmission process.

that monetary interventions do something special to banks and thus to firms and households. According to the bank lending channel theory, monetary policy actions change bank reserves and thereby the willingness of banks to supply loans. The first condition means that banks with a buffer stock of liquid assets will be able to offset policy-induced reserve changes more easily than other banks. The latter means that the impact of a change in loan supply on firms and households depends on their financing methods. The overall implication is that monetary policy has a larger impact on individual firms and households that are reliant on banks for their financing than self-financing firms. As a matter of fact this characteristic is mainly the result of tradition and the historical evolution of institutions, which as a matter of fact may differ among countries.

3 CROSS-COUNTRY DIFFERENCES IN INSTITUTIONAL ENVIRONMENT: THE STYLIZED FACTS

3.1 Economic structure

Interest rate sensitivity and nominal stickiness

Some industries are more sensitive to interest rate changes than others, and hence changes in policy-controlled interest rates may have differentiated effects across industries. Therefore cross-country differences in monetary transmission through interest rates are related to the industrial composition of the national economy and economic behaviour. Countries with relatively capital-intensive industries are more sensitive to interest rate changes than countries where the services sector dominates. In general, cross-country differences in industrial composition are small. The most striking difference is perhaps the relative importance of manufacturing industry in Germany, the size of the agricultural sector in Italy and the Netherlands, and the slight predominance of the services industry in Belgium and France over other countries. Table 1 sets out a cross-country picture of the economic structure in the six original EU member countries.

Table 1 Economic structure in 1993
(percentage of GDP)

	GE	FR	IT	UK	BE	NL
Agriculture	1.0	2.3	3.0	1.6	1.6	3.1
Manufacturing	26.7	20.0	20.0	20.4	18.2	20.4
Utility	2.2	2.4	5.7	2.2	4.0	1.7
Construction	5.4	5.1	5.7	4.6	5.1	5.1
Services	61.2	66.7	65.0	61.9	66.2	64.9
Other	3.5	3.5	0.8	9.3	4.9	4.8
	100	100	100	100	100	100

Source: National Accounts OECD 1984-1996, Volume II, 1998, Table 12.

Changes in the real interest rate, determined by the nominal interest rate and expected inflation affect domestic demand. The speed of the response depends on the public's ability to learn and nominal rigidities, particularly about monetary policy and institutional arrangements, in e.g. in the labour market. In this the wage-setting process by labour unions plays a key role. Crucial is the degree of centralization of wage bargaining affecting inflation. The strategic interaction among many uncoordinated unions and a single central bank, *in casu* the ECB, implies that monetary authorities face a worse output-inflation trade-off than they would with a single labour union. However, the labour market reforms, such as reducing the bargaining power of the unions or increasing wage

flexibility may decrease nominal wage stickiness. Of the six EU countries considered in this article, the process of labour market reforms seems to be the most advanced in the UK and the Netherlands. This may explain why the degree of nominal stickiness is lower in the UK and the Netherlands than in other countries. Therefore, monetary transmission may differ among the countries considered here.

Exchange rate sensitivity

Besides interest rates, the exchange rate is an important and major transmission mechanism. The exposure of the Eurosystem to foreign trade is similar to that of the US and Japan although individual countries within the euro area will be differently affected by exchange rate developments. This depends on the degree of openness of their economies. Belgium and the Netherlands are extremely open compared to Germany, France and Italy. In addition, exchange rate movements should be separated into an intra-EMU channel, non-existent since the introduction of the euro, and an extra-EMU channel. This refers notably to the American dollar, the yen and, for the time being, the British pound channel. As a matter of fact a large share of the exports of the UK and to a lesser extent also of Germany and Italy goes to the US, while the US is far less important for the Belgian and Dutch export market as shown in Table 2. Again this different Anglo-Saxon exposure reflects differences in the strength of exchange rate sensitivity among EMU countries.

Table 2 Share of UK and US in exports EU countries, 1997
(percentage of total exports)

	GE	FR	IT	UK	BE	NL
United Kingdom	8.5	9.9	7.1	-	9.8	10.0
United States	8.6	6.4	7.9	12.6	4.8	3.7
UK and US	17.1	16.3	15.0	12.6	14.6	13.7

Source: Direction of Trade Statistics 1991-1997, Yearbook, IMF, 1999.

3.2 Financial structure

Behaviour of the banking sector and bank dependence

The extent to which central bank actions determine loan supply and the degree of bank dependence in the economy are key factors in determining the empirical relevance of the bank lending channel. A central bank is able to constrain bank lending through specific reserve or capital requirements. In the pre-EMU period, minimum reserve requirements were the strictest in Germany and Italy. Since January 1999, however, they are the same for all EMU countries creating a level playing field. On the

other hand, capital requirements are governed by international capital adequacy rules transcending the euro area. Therefore, cross-country differences occur and determine the private sector's financial behaviour and banking dependence.

Especially in continental Europe, banks provide the bulk of credit to enterprises. By contrast, firms in the UK raise three to four times as much funds in the capital market as typical continental European firms. An exception is perhaps France where securities markets have recently developed fast. In most European countries, non-financial firm debt rating, necessary for bond financing, is still in its infancy. The main exceptions are the UK and France where most firms are rated by the major rating agencies. Also the ratio of outstanding commercial paper to bank credit, although still very low overall, is much higher in the UK and France than in the other EU countries, viz. 2% against 1%. Moreover, countries with relatively many small enterprises usually react more strongly to monetary policy shocks than countries with predominantly large firms. This may be due to the fact that large firms have greater access to capital markets and face less severe credit market imperfections. Small enterprises are particularly important in Italy and to a lesser extent also in the Netherlands, while large enterprises are common in Germany and the UK. In Italy almost 50 percent of the workforce is employed to firms with fewer than ten employees, while in Germany this percentage is less than 20 (Kashyap and Stein, 1997).

Financial intermediaries like banks play a key role in the transmission process, as they can deliberately offset monetary policy measures to some extent along at least three lines. First, the response of bank lending rates to the central bank's rates can be incomplete, because banking competition is weak or strong bank-client relations exist in Germany with house banking and in Italy with local banking. In the long run, the passthrough tends to be complete. In the short run, however, this seems to be the case only for the UK and the Netherlands. In Germany and Italy, the short-run sluggishness of bank lending rates is relatively high. Second, banks' access to non-deposit funding such as certificates of deposits is often important. As a consequence, small banks are generally more responsive to monetary policy shocks than big banking conglomerates. Big internationally operating financial intermediaries can also easily reshuffle sources from other affiliated banks. The degree of asymmetric information may also be related to the size of banks. Big banks often have more and better information with respect to credit markets than small banks. Banks are relatively small in Germany but large in Belgium and the Netherlands. Third, an important factor for a different significance of credit channels among countries is the degree of liquidity of bank balance sheets and the implied health of national banking systems. Banks may be able to adjust their asset portfolios by selling liquid assets rather than liquidating loans. The weaker a national banking system, the stronger the expected impact of central bank policy change. In this respect the banking system is comparatively healthy in the UK and the Netherlands and perhaps

relatively less so in France and Italy. Again, this may affect monetary transmission in countries and introduce cross-country differences in response to monetary shocks.

Credit maturity and legal structure

One of the key features of a credit contract is its maturity while a greater use of short-term finance is often cited as the cause of cross-country differences in the impact of monetary policy. In all countries, with the exception of Italy and the UK, long-term credit to the private sector accounts for about 80% of total credit as set out in Table 3. In all the six countries considered here, the business sector accounts for a larger share of short-term credit than the household sector, which is due to less reliable public information about households than firms. This, however, seems to be fairly natural and not a matter of concern.

Table 3 Short-term versus long-term credit, 1993
(percentage of each sector's credit)

Country	Private sector		Firms		Households	
	Short	Long	Short	Long	Short	Long
Germany	16	84	22	78	10	90
France	17	83	27	73	8	92
Italy	51	49	56	44	41	59
United Kingdom	31	69	50	50	18	82
Belgium	23	77	37	63	7	93
Netherlands	17	83	23	77	8	92

Source: Borio (1996).

Differences in financial structure also reflect differences in corporate legislation. To be specific, one may think of differences regarding civil codes protecting shareholders and creditors. La Porta *et al.* (1997, 1998) report that corporate ownership is more concentrated in countries where shareholders and creditors enjoy weak legal protection. Moreover, countries with weaker legal rules and less rigorous law enforcement seem to have smaller and narrower capital markets. Fiscal rules may also have an impact on financial structure. All countries create a tax advantage for debt and hence encourage long-term indebtedness, in view of the often positive slope of the term structure of interest rates and the deductibility of interest payments. This again explains differences in the strength of monetary transmission across countries and then the cross-country impact of a single monetary policy.

4 INSTITUTIONAL STRUCTURE AND MONETARY TRANSMISSION: THE ECONOMETRIC EVIDENCE

4.1 Some general findings on monetary transmission

There is, as described above, broad agreement in theory about the various channels of monetary transmission. However, no consensus has been reached about the relative empirical importance of the various transmission channels. Measurement of the effects of monetary policy on the real sector of the economy is hampered by the lack of a universally accepted common analytical framework. The main problem for empirical research assessing the effects of monetary policy concerns the precise identification of monetary policy shifts. Another problem is that the existing statistical evidence refers to the strength of monetary transmission in the past, i.e. before the start of EMU. Moreover, the obtained empirical results are conditional on the different monetary and exchange rate regimes in the countries considered. According to the Lucas-critique there is little to be learned from past history when a totally new situation arises. This view is not very helpful. More importantly, it does not imply that econometric evidence based on data from the pre-EMU period is useless, on the contrary as far as history – and econometric evidence provides a sort of historical picture – can teach us something.

Broadly speaking, three contrasting approaches are used to examine the monetary transmission mechanism empirically. These are large structural macroeconomic national or multi-country models, summarizing an economic-theoretic view; (structural) vector autoregression (VAR) models describing a purely statistical relationship between variables; small - Mickey Mouse - empirical models mostly with an underlying theoretical framework that is well-understood and relevant to the issue at hand. The general conclusion that emerges from these three modeling approaches is that the outcomes differ substantially for the same country. These differences are often larger than the differences which appear across countries using a common model or method. Although these studies have not provided consistent evidence about either the extent nor the ranking of possible differences in monetary transmission across EU countries, they certainly show that the overall impact of interest rates on output is substantial and greater than that of other monetary shocks. This holds for both the US and Europe. With the exception of the UK, the European economies examined turn out to be considerably more sensitive to long-term than to short-term interest rate shocks. Changes in short-term interest rates affect economic activity largely indirectly through long-term rates and the exchange rate. In addition, cross-country statistical evidence indicates that interest rates influence the real economy partly through credit channels, with monetary tightening leading to a decrease in the supply of credit.

4.2 Economic structure and monetary transmission

In their empirical analysis of the industrial impact of monetary policy in the UK, Ganley and Salmon (1996) show that the effects of monetary tightening are unevenly distributed across sectors. The size and timing of contractions in output support the view that some industries are especially sensitive to monetary tightening. As may be expected, sectors such as construction show a sizable and rapid decline in output whereas sectors like agriculture and services respond in a much more muted manner. The smallest output contraction is in agriculture, as this sector reacts rather weakly to a policy-induced monetary supply shock. Industry as a whole, however, also responds quite sharply to monetary tightening but response by some large industrial sectors, notably the utilities, seems to be subdued. Within the industrial sector there is, however, quite a wide variation in monetary policy responses. Assuming that these differences in responses may be generalized for other countries, they imply that Germany is comparatively sensitive to changes in monetary conditions, because of the importance of the manufacturing and construction sectors. As shown in Table 1, in Germany, both sectors account for over 32% of gross domestic product against about 25% in the other countries considered. By contrast, the service sector in France, Belgium and the Netherlands is comparatively large, with the accompanying insignificant responses to monetary policy. Moreover, the UK study by Ganley and Salmon indicates that some of the industries showing the most marked responses are made up of relatively small firms. This finding suggests that credit market imperfections may play a key role in the monetary policy transmission process and that economic structure among countries matter for monetary policy.

4.3 Financial structure and monetary transmission

Household versus business sector

Several studies have investigated the credit channels of monetary policy by distinguishing between the business and household sector. Dale and Haldane (1995) for instance find for the UK that firms raise both borrowing and deposits after a monetary tightening in the short run, while households increase deposits and reduce borrowing. These results support the credit channel hypothesis and imply that credit is superior to money as an indicator of monetary transmission for small borrowers, i.e. the household sector, and deposits (or money) for large borrowers, i.e. the business sector. Barrán (1996) also investigates sectoral differences in monetary transmission in Germany and France. The response to monetary tightening is qualitatively similar in the two countries; Germany especially reacts with the same delay to a monetary policy shock as found by Dale and Haldane for the UK. Also De Bondt (1999) shows that notably in Germany, France and Italy credit to households decreases more

following monetary tightening than credit to firms. Again, this result supports the credit channel hypothesis of monetary policy for the households but rejects it for the business sector.

Impact of external finance premium

Substantial empirical evidence, especially for the US, supports the importance of both financial market imperfections and the dependence on bank financing. This is not to say that the traditional mechanisms, operating through money supply, interest and exchange rates, are not present as well. The key question, though, is whether the traditional interest rate channels are augmented by credit channels. Some empirical research for Europe argues that this is not the case, while other studies provide empirical evidence in favour of the credit channel hypothesis. Several VAR studies offer evidence that the external finance premium rises after a monetary contraction resulting in a fall in output. On the basis of several cross-country data sets and empirical models, De Bondt (1999) concludes that credit channels are dominant in continental Europe, especially in Germany and Italy. He also examines the relation between consumption and the external finance premium, which plays a crucial role in the credit channel theory. In Germany, Italy and the Netherlands, the impact of the external finance premium on consumption seems to depend on the stage of the business cycle along with informational asymmetries between consumers and financial intermediaries in the credit market. During a recession this financial accelerator effect may lead to a decline in annual consumption growth of about 0.4 percentage point per quarter. Moreover, bank-level panel data analyses show that in continental Europe monetary policy matters most for small banks and for banks with relatively illiquid balance sheets. For these banks, it is less easy to offset a change in the monetary stance. Moreover, in Germany and Italy, loan demand interacts with bank size. Big banks' effective loan demand reacts weaker to a monetary contraction than small bank's loan demand. Perhaps this is so because big and solid banks often lend to borrowers whose balance sheets remain relatively strong over the business cycle.

Impact of legal structure

Cecchetti (1999) argues that the legal system of a country provides the basis for financial structure and, hence, for the monetary transmission process. His results are consistent with the hypothesis that countries with weak shareholder and credit protections and poor law enforcement will have less developed financial systems and greater sensitivity of output and inflation to interest rate changes than countries with strong company law arrangements. Countries like the US and the UK where financial data indicate that the bank lending channel is strong exhibit more sensitivity to monetary policy movements.

5 DOES MONETARY TRANSMISSION IN THE EURO AREA CONVERGE?

A criticism of the conclusions of the former section could be that it applies only to the pre-EMU period. However, the introduction of the euro may be a catalyst for the convergence of economic behaviour and the harmonization of economic and financial structures. Hence the conjecture seems warranted that the monetary transmission process in the Eurosystem may converge. At the moment, empirical evidence to support this hypothesis is difficult to obtain, mainly because we simply do not know the future. What we know for sure is, however, that both economic and financial structures will definitely change and therefore so will differences in monetary transmission across EMU countries. A wide spectrum of changing factors, of which monetary transmission is only one, determines the institutional structure and therefore the monetary transmission process. For example, advances in information and telecommunication technologies have been changing and will continue to change the financial structure by lowering transaction costs and reducing asymmetric information (Mishkin and Strahan, 1999). These changes may reduce the role of traditional financial intermediaries and improve overall efficiency by lowering the costs of financial contracting. At the same time the financial intermediaries may change in response to the monetary union and its single monetary policy, because they learn over time.

In this article, we analysed the future of institutional financial structure in the euro area by examining the economic, financial and legal structures separately. Differences in industrial composition, the degree of openness of the national economies and in the extra-EMU exchange rate channel will remain, however. The degree of nominal rigidity might converge to some extent as agents adjust their behaviour to operating in a single market with a common currency. However, this convergence will be partial only. In contrast, the degree of bank dependence and the role of banks will most probably converge further to a more US-style banking system. Most likely, in the short run there will be an EU-wide liquid market for corporate bonds, thus reducing the role of banks in the intermediation of savings. Today a restructuring and consolidation process of both financial and non-financial firms is already going on. Another striking discrepancy in financial structure, viz. the difference in credit maturity structures, is likely to diminish, because countries face a common anti-inflationary monetary policy. Differences in legal structures, for example tax regimes, will remain, however. In addition, the convergence to a US-style financial structure will only be accomplished if shareholders and creditors in all EU countries enjoy the same rights. So far this is no more than a dream.

All in all, we may conclude that some differences in institutional structure will remain because

financial structures will converge to a more US-style financial structure, but economic structures and legal structures will converge only partially. Moreover, the convergence to a more US-style financial structure does not imply, following empirical US credit channels studies, that credit channels are becoming irrelevant. According, to the empirical literature this is certainly not the case.

6 CONCLUDING REMARKS

The importance of the financial structure for monetary behaviour has been emphasized by a few authors and has received attention only recently although monetary historians (e.g. Kindleberger 1993) have never neglected it. Against the background of historical cross-country differences in economic and financial structures and empirical evidence on monetary transmission in the euro area it is quite plausible that monetary transmission differs across countries. Most likely, monetary transmission in the member states of the euro area will converge along with the institutional structures as the outcome of a cross-country learning process. However, convergence will only be partial, because cross-country differences in institutional structures, particularly in economic and legal arrangements, will remain as institutional differences are a fact of life and history. The main message of this article is that institutional detail in countries matters also for the strength of a single monetary policy. Thus, EMU still offers major challenges to economists and opportunities for institutional convolution. This calls for an open society, apt to learn continuously.

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