CBBA–EUROPE REVIEW

CROSS BORDER BENEFITS ALLIANCE – EUROPE REVIEW

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SUMMARY

WELCOME TO THE CBBA-EUROPE REVIEW!

Dear reader, welcome to the Cross Border Benefits Alliance - Europe's Review: the "CBBA-Europe Review".

If you do not know us, I'll give you some information about CBBA-Europe.

CBBA-Europe is a Brussels-based advocacy organization created in October 2017, and officially launched the last 6th of December 2017 through its inaugural conference titled "Cross-border and Pan-European Pensions: Why WE Do Support Them".

Indeed, CBBA-Europe aims at promoting the creation and development of cross-border/pan-European social benefits in Europe, including pensions, healthcare, disability, long-term care, or programs for the well-being/wellness of people in the workplace and private life.

We are strongly convinced that the current national barriers to the creation of cross-border employee benefits represent a useless burden and foolish costs for sponsor companies and future beneficiaries. Therefore, we are determined to lobby the EU and its Member States to remove such obstacles, being them of legal, taxing, administrative, or political nature.

Economies of scale, simplicity in administration, full portable social benefits, costless mobility of workers and consistent taxation formulas would be beneficial for both, the EU internal market and the European Social Model. In addition, huge capitals potentially accumulated by these pan-European funds might be invested in the European economy, and contribute to the completion of the Capital Markets Union (CMU). More in general, we strongly believe that the economic and social objectives of the EU can go hand-in-hand and be beneficial to each other: after all, it is just that "Social Market Economy" mentioned in the Treaty on the European Union (article 3.3).

Our Alliance is extraordinarily transversal with regards to its members: multinational employers operating in several Member States of the EU, sector-wide employee benefit funds including representatives of the employers' and workers' side, national and European trade unions, insurance, mutualistic and bilateral social providers; pension or healthcare funds. administrators, actuaries, lawyers or consultants; consumers' organizations; national and international as-

sociations representing companies, social protection funds, professionals in the field, etc. In other words, our Alliance aims at regrouping and representing the voice of all those actors and stakeholders who are in favour of cross border solutions.

As you will see on our website (www.cbba-europe.eu), CBBA-Europe is growing very fast, considering its recent creation. Moreover, our Alliance aims to be a valid and constructive interlocutor of the decision-makers, by participating in working groups, drafting reflection papers, creating reports, organizing public events, etc.

In order to do so, I am convinced that a strong and valuable network of experts would be fundamental to make our positions more consistent and solid.

Hence, the idea of creating a Scientific Council made up of professors, researchers and experts, many of them very well known in our sector, and working with the most prestigious universities of Europe and overseas. Finally, we arrive to the CBBA-Europe Review: why don't collect contributions, ideas, and proposals coming from the members of our Scientific Council? The review is accessible to everyone, and I really hope that it will represent a good source of reflection and inspiration.

Enjoy the reading!

Francesco Briganti

Secretary General of CBBA-Europe

AN INTRODUCTION FROM THE REVIEW'S COORDINATOR

There is only one way to avoid criticism: do nothing, say nothing, and be nothing.
Aristotle

It is with great honour that I am announcing the first edition of the "CBBA-Europe Review". The purpose of this new initiative is to discuss topics related to promotion, creation, development and functioning of cross-border/pan-European employee benefits plans in Europe, including – but not limited to – pensions, healthcare, disability, long-term care or unemployment benefits, etc.

Heritage of trust law as a form of property transfer, the financial market has completely changed the nature of pension and insurance arrangements. The conservation of the property is no longer the only mission. It is necessary to make this property fruitful, represented by the contributions and the plans, in the name of the participants and beneficiaries only. It is also seen that life expectancy in the European Countries is a challenge that people is currently facing, and alternatives to the conventional formulas of the "Welfare State" are already being implemented and / or studied. We must seek a balance between Social and Economic. And Europe would better face these challenges by joining forces and overcoming inefficiencies, partly deriving from the fragmentation of its national social systems. Europe should be consistent with its ambitions: an Economic Europe has been already created through a big common market of services, goods, capitals and people moving freely throughout the Continent; what about the creation of a real Social Europe? Here again, a balance between Social and Economic should be found also at this level.

New initiatives such as the Pan-European Personal Pension Product (PEPP), possibly the creation of a new EU legal framework for a pan-European DC occupational pension, a better and clearer framework for cross border healthcare provision, and new ideas on the creation of a pan-European unemployment scheme, especially in periods of dramatic youth unemployment, seem to represent the aforementioned new alternatives to the conventional formulas of

the national "Welfare State".

On the financial side, pension funds and insurance companies are among the largest institutional investors in the World. Good investments with good returns will depend also on how economies, trends and values of goods are evolving around the world. And the disinvestment process of these largest funds in companies producing weapons, tobacco or nuclear plants is a clear example of the importance of these organizations. Today the focus is on ESG investments and more in general on responsible and sustainable finance, also in line with the new EU Directive 2016/2341 on the Activities and Supervision of Institutions for Occupational Retirement Provision (the so called "IORP II Directive"). Here there is a clear link between democracy and a market economy. At the same time, pan-European pension funds or insurance solutions might represent an impressive opportunity to further develop the European "real economy", by financing infrastructures, start-ups, research, IT etc.: in other words, to contribute building the Europe of the future.

The "CBBA-Europe Review" aims to represent a space for discussion of new ideas and new ways of looking at the phenomenon of cross-border/pan-European employee benefits in Europe, and in the World. Published in digital version twice a year, it is open to all those who want to further develop this subject. I take this opportunity to thank the Secretary General of CBBA-Europe, Dr Francesco Briganti for urging this initiative; the members of the Scientific Council of CBBA; and all the other authors of articles that will be hosted in this Review: you are all helping us to build up this project!

Place du Panthéon, Paris, July 1st, 2018

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CBBA Europe has a Scientific Council formed by academic experts of several different European and worldwide countries. Our members are contributing to the launch of this review, which is released twice a year[1].

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CAN A DUTCH IORP OFFER A PEPP?

Working Paper*
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Keywords

PEPP – PEPP saver – providers– applicability in the Netherlands – Pension Act-route – Act on Financial Supervision-route

Abstract

The PEPP is a EU pension product which is governed by EU law. It can serve as an addition to existing schemes and products. There is no EU law definition of pillars. In this working paper authors argue that a Dutch DC IORP (a Premium Pension Institution) can offer a PEPP in conformity with Dutch and EU law. No amendments to national law seem necessary and the system of mandatory participation in the Netherlands is not breached. This finding might be helpful in the on-going discussion on the PEPP regulation for DC IORPs in other Member States (inter alia the SEPCAV in Luxembourg).

1. Introduction

On 29 June 2017 the proposal of the European Commission (EC) for a regulation of the European Parliament (EP) and of the Council on a pan-European Personal Pension Product (PEPP) was issued (hereinafter: PEPPR or 'proposal')[4]. The proposal intends to establish a separate regulatory framework for personal pension products on a EU level. This will according to the EC benefit consumers as the proposal envisages more choice for PEPP savers[5], greater market competition, consumer protection via stringent information requirements, distribution rules and a simple default investment option. PEPP savers will be able to switch providers and continue contrib-

* At the time of writing the PEPP regulation has not been adopted by the Council. Therefore, this is a non-final version of a paper we will re-publish once the regulation enters into force.

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[4] Proposal for a Regulation of the European Parliament and of the Council on a pan-European Personal Pension Product (PEPP), COM/2017/0343 final - 2017/0143 (COD).

[5] Article 2(3) of the proposal, Ibid.

uting to their PEPP when moving to another Member State.

The proposal also benefits providers by enabling more providers to offer PEPPs throughout the EU. In the words of Vice-President of the European Commission, Valdis Dombrovskis:

"The pan-European personal saving product is an important milestone towards completing the Capital Market Union. It has enormous potential as it will offer savers across the EU more choice when putting money aside for retirement. It will drive competition by allowing more providers to offer this product outside their national market. It will work like a quality label and I am confident that the PEPP will also foster long-term investment in capital markets."[6]

This working paper will explore the feasibility of the articulated ambition of the EC taking into account the applicability of the PEPP into the specific Dutch legislative context. The main question reads as follows: can Dutch IORPs offer a PEPP? The main sub question is: if so, can a Dutch IORP offer a PEPP without infringement of the Dutch system of compulsory membership?

After all, in the negations in Brussels on the PEPP the biggest hurdle seems to be precisely this. Therefore we focus in this working paper on this country and the Dutch system.

In this working paper we want to shed some new light in the discussion on the PEPP and this might also be useful for the discussion in other EU Member States.

To answer the main (sub) question, in the first part, attention will be drawn to the objectives, the scope of savers and providers according to the PEPP proposal and its provision on biometric risk. The latter issue will be linked to the definition of IORPs as provided in the IORP II Directive.

In the second part, the applicability in the Netherlands will be portraited by examining three focus areas: i) the view of the Dutch government on the PEPP proposal in relation with the compulsory mandatory participation system for second pillar IORPs, ii) the Dutch Pension Act-route and iii) the Dutch Act on Financial Supervision-route. IORPs on both the Dutch Pension Act-route and Dutch Act on Financial Supervision-route will be tested on their ability to carry biometric risks and their legal margin

[6] European Commission' press release, 29 June 2017. The text can be consulted by following this link: http://europa.eu/rapid/press-release_IP-17-1800_en.htm?locale=en, (last visited on 13 May 2018).

to offer PEPPs.

It will be argued that a certain Dutch IORP, a Premium Pension Institution (the PPI) as defined in Article 1:1 of the Dutch Act on Financial Supervision (and is exempted from covering biometric risks) is able to offer PEPPs.

In the last part (four) the conclusion will follow.

2. Part 1: the proposal

2.1. Reasons and objectives

The PEPPR aims at improving both the offering of personal pension products (PPP) for individuals by increasing the number of personal pension products on the European market and thus enhancing opportunities for providers to sell personal pension products [7]. In doing so, the European Commission wishes to overcome the current situation of unequally developed personal pension market as well as the given that personal person products are unequally affordable in the EU.

The proposal thus entails a two-side, reciprocal dynamic between the individual buyer and the selling providers of the PEPP. At the moment, providers are not able to benefit from maximising risk diversification, innovation and economies of scale. As a result, the number of options to provide a personal pension product is limited which in turn eludes the vision of an unattractive product. It also means that individuals who have bought a personal pension product pay higher costs for their product.

In terms of market structure, this situation leads to a lack of liquidity and depth in capital markets compared to other markets such as the United States of America where pension funds play a larger role as institutional investors[8].

Apart from the a greater choice for consumers and a proper functioning market structure, the proposal intends upgrade the standard of existing personal pension products on for instance the aspect of distribution, investment policy, provider switching and cross-border provision (portability).

This has led the European Commission to

[7] Explanatory Memorandum accompanying the PEPP proposal as referred to in footnote 3, p. 2-3. See also preambles 3, 4 and 10 of the PEPP proposal.

[8] Further reading suggestion on the American funds: S. Hooghiemstra, 'The future of Luxembourg Investment Funds in the next decade', April 2018, last accessed 13 May 2018: https://www.nautadutilh.com/nl/information-centre/nieuws/2018/4/the-future-of-luxembourg-investment-funds-in-the-next-decade/.

define the main purpose of the proposal as follows: to establish a pension product to be regulated partially[9] on EU level. To be more precise, the main purpose of the PEPP consists of six sub purposes[10]:

To enable providers to create a personal pension product on a pan-EU level;

To divert more household savings from traditional instruments;

To provide measures that guarantee consumers to be fully aware of the main features of product;

To facilitate consumer liberty to elect a specific investment profile;

To allow consumers to benefit from EU-wide portability, full transparency of costs and the ability to switch from provider;

To set up a supplementary voluntary scheme designed to complement existing national schemes rather than replacing them.

2.2. Legislative history: 29th regime

The idea of setting up a supplementary voluntary PEPP or PEPP scheme[11], as opposed to national schemes, is known as the 29th regime: the new regime alongside the 28 existing regimes of the EU Member States. The PEPP is thus – except in principle for the taxation and other certain aspects described above in footnote 8 - governed by EU law, whereas national schemes are primarily governed by national laws of the Member States. The 'bonus' of the PEPP lies in the additional character: Member States can uphold their current ways of operating pension schemes, but in addition there is this extra, voluntary framework for pension savings. It is a flexible framework especially designed to allow providers to 'tailormade' products that fits within their business objectives. Moreover, it encourages Member States to invest in the 'real' economy in a sustainable manner and thus envisaging the long-term liabilities under PEPP.

It further might raise the question why was opted for a 29th regime. The rationale be-

[9] Not each aspect is to be regulated on EU level. For instance provisions concerning retirement age, the decumulation phase, the minimum period of belonging to a PEPP scheme and maximum period before reaching retirement age for joining a PEPP scheme remain a member state discretion. This is articulated in several provisions throughout the proposal. See also p. 13 of the Explanatory Memorandum accompanying the PEPP proposal as referred to in footnote 3 and 6.

[10] Explanatory Memorandum accompanying the proposal as referred to in footnote 3, p. 3.

[11] PEPP scheme means a contract, an agreement, a trust deed or rules stipulating which retirement benefits are granted and under which conditions on the basis of an individual retirement savings plan agreed with a PEPP provider, Article 2(3) 4 PEPPR.

hind the idea is discussed in the Commission's Action Plan on Capital Markets Union of September 2015[12] and thoroughly discussed by Van Meerten and Hooghiemstra[13].

In general it is the European Commission's aim to strengthen the EU economy. Free flow of capital is a fundamental principle of the EU. Although progress has been made over the past fifty years, EU's capital markets are still relatively underdeveloped and fragmented[14]. For that reason the Capital Market Union will reinforce the third pillar of the Investment Plan for the EU. Its main purpose is to remove regulatory barriers to investment.[15] Stronger capital markets will strengthen the link between savings and growth[16].

In order to help European households to face challenges such as increased longevity, fiscal pressures at country level and low interest rates, the European Commission launched an initiative to support the development of individual "third pillar" pensions in the EU[17]. Currently, there is no effective single market for individual pensions. In the words of the European Commission:

"A patchwork of rules at EU and national levels stands in the way of the full development of a large and competitive market for personal pensions"[18].

The proposal is set up in this context. In its Communication Mid-term Review of the Capital Markets Union Action Plan[19], the European Commission announced the introduction of PEPP – a product designed to meet the challenges for households related to long-term individual pension savings.

As explained when discussing the objectives of the proposal, the framework intends to partially regulate essential features of PEPP. In order to ensure efficient and proper regulation, the instrument of a regulation[20] was chosen[21].

This choice has advantages. Since the PEPP is a special kind of regulation ex Article 288 TFEU, – which as less as possible

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[12] COM(2015) 468 final, p. 18-19.
[13] Hooghiemstra, S., Meerten (van), H., "PEPP – Towards a Harmonized European Legislative Framework for Personal Pensions", (June 28, 2017), p.7. Available at SSRN: https://ssrn.com/abstract=2993991 or http://dx.doi.org/10.2139/ssrn.2993991.
[14] COM (2015) 468 final, p. 3.
[15] European Commission press release, 6 December 2016. The text can be consulted by following this link: http://europa.eu/rapid/press-release_IP-16-4282_en.htm.
[16] Idem footnote 13
[17] See article as referred to in footnote 12, p. 19.
[18] SWD(2017) 244 final, p. 2.
[19] COM(2017) 292 final, p.6.
[20] Article 114TFEU.
[21] The matter is discussed on p. 8 of the Explanatory Memorandum, accompanying the PEPP proposal, as referred in footnote 3 and 6.

delegated acts[22]- is directly applicable in all Member States, it would enable a prosperous take-up of PEPP and contribute more rapidly to addressing the need for additional pension savings and investments in the Capital Markets Union context. Therefore, it must be avoided that certain PEPP features become subject to national rules. That is, of course, with the exception of those features of the PEPP that are left to Member States' discretion, being taxation as the most obvious example.

2.3. What is PEPP?

Article 2 of the proposal distinguishes two definitions: First, it defines a personal pension product (PPP) followed by, second definition of the PEPP.

When referring to a PPP, one is referring to a product that is based on a contract between an individual saver and an entity on a voluntary basis with an explicit retirement objective. The product provides for capital accumulation until retirement with limited option for early withdrawal before reaching retirement. It serves as an income after entering retirement[23].

Article 2(b) of the proposal defines PEPP as follow:

"(..), a long-term savings personal pension product, which is provided under an agreed PEPP scheme by a regulated financial undertaking authorised under Union law to manage collective or individual investments or savings, with no or strictly limited redeemability".

PPPs are not considered as the 29th regime since practise revealed too many difficulties in converging national third pillar schemes. PPPs can be 'wrapped' into PEPP though on the basis of their common features[24].

2.4. Who is qualified to buy PEPPs?

To answer that question, the definition of the PEPP saver is leading. Article 2(3) of the proposal distinguishes two categories:

The first category consists of retail clients as defined in (11) of Article 4 (1) of Directive 2014/65/EU of the European Par-

[22] National measures implementing these delegated acts might disturb the very nature of the PEPP: uniformity. See also: Meerten, (van), H., Brink (van den) A., "EU Executive Rule-Making and the Second Directive on Institutions for Occupational Retirement Provision", Utrecht Law Review, 2016 / 12, p. 75-85.

[23] Article 2(1) of the PEPP proposal.

[24] For a more elaborate reading on PPPs versus PEPP, please consult (as referred to in footnote 12): Hooghiemstra, S., Meerten (van), H., "PEPP – Towards a Harmonized European Legislative Framework for Personal Pensions", (June 28, 2017), p.7. Available at SSRN: https://ssrn.com/abstract=2993991 or http://dx.doi.org/10.2139/ssrn.2993991.

liament and of the Council[25]. A retail client is any client who is not a professional client such indicated in (10) of the Directive and who is exempted from the list of professional clients as stipulated in the Annex II[26].

The second category refers to a customer in within the meaning of Directive 2002/92/EC of the European Parliament and of the Council[27] unless that customer would qualify as a professional client as pointed in (10) of Directive 2014/65/EU.

In other words, a PEPP saver is always an individual.

2.5. Who is qualified to sell PEPP?

A PEPP may only be manufactured and distributed where it has been authorised by EIOPA in accordance with this proposed Regulation[28]. Six types of financial undertakings are eligible for PEPP authorisation:

Credit institutions authorised in line with Directive 2013/36/EU on activity of credit institutions and prudential supervision of credit institutions and investment firms[29];

Insurance undertakings authorised by Directive 2009/138/EC concerning direct life insurance[30];

Institutions for occupational retirement provision registered or authorised in accordance with Directive 2016/2341/EU[31];

Investment firms authorised by Directive 2014/65/EU with regard to portfolio management or investment advice[32];

Investment companies or management companies authorised by Directive 2009/65/EC[33];

Alternative investment fund ("AIF") manag-

[25] Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU (OJ L 173, 12.6.2014, p. 349–496).

[26] For instance, a retail client cannot be an authorised or regulated financial institution or institutional investor. See list in Annex II of Directive 2014/65/EU, ibid.

[27] Directive 2002/92/EC of the European Parliament and of the Council of 9 December 2002 on insurance mediation (OJ L 009 15.1.2003, p.3), amended by Directive 2014/64/EU.

[28] Article 4(1) of the PEPP proposal.

[29] Directive 2013/36/EU of the European Parliament and of the Council of 26 June 2013 on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC (OJ L 176, 27.6.2013, p. 338).

[30] Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the
Taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II) (OJ L 335, 17.12.2009, p. 1).

[31] Directive 2016/2341/EU of the European Parliament and of the Council of 14 December 2016 on the activities and supervision of institutions for occupational retirement provision (IORPs) (recast) (OJ L354, 23.12.2016, p. 37).

[32] As referred to in footnote 24.

[33] Directive 2009/65/EC of the European Parliament and of the Council of 13 July 2009 on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities (UCITS) (recast) (OJ L 302, 17.11.2009, p. 32).

ers authorised in accordance with Directive 2011/61/EC[34].

2.6. Biometric risks

The PEPPR foresees in the option for PEPP providers to cover the risk of death and other biometric risks. Article 42 of the proposal specifies biometric risks as risks related to death, longevity and disability. The option for a provider to cover for biometric risks depends on the character of the IORP.

Article 6(1) of IORP II Directive defines an IORP as follows:

"Institution for occupational retirement provision', or 'IORP', means an institution, irrespective of its legal form, operating on a funded basis, established separately from any sponsoring undertaking or trade for the purpose of providing retirement benefits in the context of an occupational activity on the basis of an agreement or a contract agreed: (a) individually or collectively between the employer(s) and the employee(s) or their respective representatives, or (b), with self-employed persons, individually or collectively, in compliance with the law of the home and host Member States and which carries out activities directly arising therefrom;"

Article 15 of IORP II Directive[35] stipulates that the home Member State shall ensure that IORPs operating pension schemes, where the IORP itself, and not the sponsoring undertaking, underwrites the liability to cover against biometric risks, or guarantees a given investment performance or given a level of benefits, hold on a permanent basis additional assets above the technical provisions to serve as a buffer. The amount thereof shall reflect the type of risk and the portfolio of assets in respect of the total range of schemes operated. Those assets shall be free of all foreseeable liabilities and serve as a safety capital to absorb discrepancies between the anticipated and the actual expenses and profits.

This implies two types of IORPs: Article 15 IORPs and non-Article 15 IORPs. The latter group of IORPs do not cover biometric risks.

[34] Directive 2011/61/EU of the European Parliament and of the Council of 8 June 2011 on Alternative Investment Fund Managers and amending Directives 2003/41/EC and 2009/65/EC and Regulations (EC) No 1060/2009 and (EU) No 1095/2010 (OJ L 174, 1.7.2011, p. 1).

[35] See Directive as referred to in footnote 30.

3. Part 2: Applicability of PEPP in the Netherlands

"It is the law of conversation. As soon as regulations come from the outside, people see it as a threat to the status quo"[36].

By this statement Stevens means that EU regulations come from outside the 'national' context of law making. This is of course not entirely true. National governments are very much active in the making of EU directives and regulations. With regard to the Netherlands, Stevens adds that the reluctant attitude toward the PEPP is 'understandable'. The Netherlands is known for its "robust second pillar"[37]. So for that reason "it is only logical that you would want as little interference as possible"[38].

The view of the Dutch government and most Dutch stakeholders on the PEPP proposal can indeed be characterised as reluctant or, in the words of Stevens, "rejecting"[39].

Although the Dutch government acknowledges the importance of a barrier-free capital market EU, the Dutch market for the third pillar pension products seems already well developed[40]. Having this said, the Dutch government does recognize the possible added value of the PEPP by stimulating pension saving by individuals who's employers do not fall under the scope of mandatory secondary pension pillar. The PEPP could be an attractive option for, inter alia, self-employed persons[41].

So according to the Dutch government the PEPP proposal lacks substantial added value to the third pillar pension market in the Netherlands. In addition, the proposal allows IORPs, second pillar pension institutions, to manufacture and distribute individual additional voluntary saving pension products which belongs in principle[42] in the Netherlands the domain of the third pillar market exclusively.

By enabling second pillar IORPs to offer PEPPs the Dutch 'pension infrastructure' seems to change. Again, in principle Dutch IORPs cannot offer third pillar products.

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[36] Stevens, Y. , "The law of conversation is strong", Netspar Magazine, Issue 23, Autumn 2017, p.4.
[37] See Article as referred in footnote 35, p.4.
[38] Ibid.
[39] Ibid.

[40] BNC-fiche PEPP proposal, p. 10
[41] Ibid., p 5-6: The government emphasises the existence of freedom of choice for self-employed persons in this matter.
[42] Some Dutch pension funds however, do already operate self-employed schemes. Also Dutch PPIs can execute individual schemes. See: Meerten, (van), H. "De PPI, Van Maar Ook Op Alle Markten Thuis?", Nederlands Tijdschrift voor Europees Recht (The PPI, Active on All Markets), No. 12, p. 347, December 2008. Available at SSRN: https://ssrn.com/abstract=2130685.

According to the Dutch government, when a second pillar IORP, in addition to their current range of products, offer PEPPs this will invoke a widening of activities that entails risks to the existing system of mandatory participation to which occupational pension funds are subject to. This will invoke a more broaden range of responsibilities for second pillar pension funds which, in turn, implies a change to the separation of responsibilities as currently envisaged in the Dutch Pension Act[43]: from this principle follows that market parties not falling under the scope of provisions in the Dutch Pension Act are in fact prohibited from activities exclusively attributed to IORPs that do fall under its scope.

In the next parts of this working paper a view contrary to the reading of the Dutch government will be explored. Given the fact that the issue of allegedly breaching the system of mandatory participation is an important deal breaker for the Dutch government regarding the PEPP, it is imperative to focus on an in-depth reading of relevant provisions and jurisprudence.

Other relevant topics of the PEPP proposal such as for instance fiscal matters and the role of EIOPA as the supervising entity will not be examined in this working paper.

3.1. Focus area 1: The view of the Dutch government on the PEPP proposal in relation with the compulsory mandatory participation system for second pillar IORPs

In the Netherlands the proposed PEPP regulation is subject to a political debate concerning second and third pillar pension markets. The proposal contains a number of elements that challenges member states to (re-) consider their retirement provision. In the Netherlands it is a widely accepted opinion that the Dutch pension provision is more than sufficient and responding to the need of participants. With that in mind, it is not difficult to understand that the reluctance of the Dutch government when it comes to elements that seem to concern existing 'pension infrastructure'. The concern is that when IORPs offer a PEPP, this infrastructure is disturbed.

The question is whether this, from a strictly legal point of view, is a realistic concern. Is the proposed PEPP regulation, or to be more precise, is the fact that a second pillar IORP is given discretion to operate a PEPP, an infringement of the principle of separation of responsibilities as articulated

[43] Provisions on separation of responsibilities are listed in Chapter 5.3 of the Dutch Pension Act.

in the Dutch Pension Act?

If the answer to this question is affirmative, then indeed the Dutch Pension Act should be amended. If the answer to this question is negative however, existing legislation can be uphold, ergo, the proposed PEPP regulation can function without amending Dutch legislation. Assuming that the current organisation of division of responsibilities does meet the vision of the Dutch government on how retirement provision should be envisaged in the Netherlands, would the proposed PEPP regulation imply an infringement the system of mandatory participation?

In order to find out the answer to this question it is crucial to narrow down the question: what types of IORPs exist in the Netherlands and what is their legal margin to (hypothetically) manufacture and distribute a PEPP?

In the Netherlands the IORP I Directive was implemented in the Pension Act and in the Act on Financial Supervision[44]. Second pillar pension schemes are either Defined Benefit (DB) or Defined Contribution (DC).[45] DB and DC pension schemes are covered in the Pension Act while certain DC pension schemes are also regulated in the Act on Financial Supervision.

Since 2011 a special IORP in the Netherlands exists: the Premium Pension Institution (PPI). The PPI was introduced in the Netherlands as a first phase in the process to further implement the IORP I Directive[46]. Contrary to for instance a pension fund or an insurer[47], initially a PPI focused only on the accrual phase of the DC pension scheme. The payout phase had to be transferred to another financial undertaking. This mechanism is very similar to the PEPP.

The PPI is, in fact, an institution especially designed to operate pension schemes that

[44] To read more about the implementation of the 2003 IORP directive in Dutch legislation see Meerten, (van) H., "De Premiepensioeninstelling, Van Maar Ook Op Alle Markten Thuis", Nederlands Tijdschrift voor Europees Recht, (The PPI, Active on All Markets)? – as referred to in footnote 41.

[45] We leave the difficulties with 'CDC' schemes untouched. See: Bennet, P. and Meerten, (van) H., "Apples and oranges: a comparison of the key features of the legislative and regulatory framework for UK and Dutch defined benefit pension schemes (including Dutch CDC Schemes)", Discussion Paper PI-1803, The Pensions Institute, Cass Business School City, University of London, 2018 (https://www.pensions-institute.org/workingpapers/wp1803.pdf).

[46] Amendment of the Financial Supervision Act and some other acts in connection the introduction of premium pensions institutions, 2008-2009, 31 891, nr 3, p.1.

[47] According to the list of eligible providers in the proposal, an insurer is entitled to manufacture and distribute PEPPs as well. This analysis will not elaborate on this. It merely seeks to answer the question whether a PPI, as an IORP, is an eligible provider.

do not entail biometric risks. In terms of operation, this implies that, at the end of the accumulation phase, the PPI transferred the capital to a biometric covering entity, i.e. a DB IORP or a Solvency II entity. Therefore, a PPI must operate Dutch defined contribution (DC) pension schemes, although technically the accrual phase of (foreign) DB is also possible.[48]

The legal margin for DB and DC pension providers to operate PEPPs depend on the applicable legislation. In the following two parts of this working paper the Dutch Pension Act and the Dutch Act on Financial Supervision are considered as governing structure of the IORP. So in other words, the legal margin of IORPs will be explored under the Pension Act (the Pension Act-route) and Act on Financial Supervision (Act on Financial Supervision-route). The purpose of exploring both routes is to illustrate their legal margin and in turn, to answer the question whether these IORPs can offer PEPPs and whether this constitutes an infringement to the system of Dutch mandatory participation (see below).

3.2. Focus area 2: Route 1 – the Pension Act-route

A pension provider's general duty is embodied in Article 32 of the Pension Act. As provider of pension schemes its general task is to perform a pension agreement based on an agreement of affiliation or affiliation regulations ex Article 1 of the Pension Act. In Article 32 of the Pension Act an agreement of affiliation is defined as an agreement between an employer and a pension provider which governs the administration[49]. Article 116 of the Pension Act contains a prohibition on ancillary activities. A pension fund must refrain from activities other than work and pension related. A minor exception to this rule might be captured in Article 117 of the Pension Act: in the event of an existing base pension scheme performed by the same pension fund it is accepted to carry out a voluntary pension scheme if this supplements the current one.

A similar scenario occurs for compulsory professional pension schemes: Article 114 of the Mandatory Professional Pension Schemes Act (MPPA) postulates the prohibition on ancillary activities with the minor

[48] See Article as referred in footnote 41.

[49] Article 1 Pension Act also lists additional pension agreements as subject matter to the agreement.

exception of the case of supplementing an existing base pension scheme by a voluntary pension scheme[50].

The prohibition on ancillary activities is the foundation of the separation of responsibilities between pension funds, pension institutions and insurers. The matter of separation of responsibilities is closely linked the issue of mandatory participation which is an imperative feature of the Dutch second pillar pension infrastructure.

Allowing Dutch DB IORPs to offer a PEPP could potentially open up the second pillar market. By effect it could create a breach to the existing privileged second pillar market that comprises out of mandatory industry-wide pension funds that benefit from an exclusive right to operate pension schemes. This is governed by the Act on Compulsory Membership of Sectoral Pension Fund 2000 (Hereinafter addressed as "Bpf Act").

Mandatory participation was established by the Bpf Act[51]. As a result participation in a pension scheme for employers and employees in certain sectors of industry is made compulsory through government intervention. Provided a pension fund meets certain criteria, such as the legal form of foundations, it is allowed to operate these pension schemes[52]. Its main features are collectivity and solidarity. In the event other market parties should enter this closed section, it adds new parties the existing second pillar market. It also would enable pension providers who previously were operating with "benefits" [53] exclusively attached to the closed second pillar market to operate PEPPs and thus operating under a privileged modus preventing a proper level playing field.

In the event a second pillar IORP, in the meaning of the Dutch Pension Act, wants to manufacture and distribute PEPPs, considered as third pillar pension products[54], a complex and political hurdle must be overcome.

This hurdle is noticed by the Dutch government and social partners in the consul-

[50] See Articles 1, 114 and 115 MPPA.

[51] See Meerten, (van) H. and Schmidt, E., "Compulsory Membership of pension schemes and the free movement of services in the EU", European Journal of Social Security, 2017, Vol. 19(2) 118-140.

[52] Ibid; Article 1 Pension Act.

[53] An elaborate discussion on the "large" mandatory participation can be read in the article on compulsory membership of pension schemes as referred to in footnote 50.

[54] They are considered third pillar products because of the following reasons: they are additional, personal (so not linked to an employer's agreement) and voluntary.

tation phase of the PEPP Regulation[55]. According to the Dutch government the second pillar structure must be left intact. The proposed PEPP Regulation seems to, thus is the view of the government, touch upon the Dutch second pillar structure. To be more particular, when a second pillar IORP is eligible to manufacture and distribute PEPPs (presumably so called "third pillar"), the existing division of pension products to be operated by several market parties will need to be readdressed. Broadened even, which implies a 'snowball effect' to the system of mandatory participation: once an IORP could offer a PEPP it might trigger the end of compulsory membership as accorded in EU case law (see below).

So to answer the question of the legal margin of an IORP under the Pension Act-route to offer PEPP two points can be made:

The first point concerns the bottom-up approach rather than the top-down approach. The instrument chosen to regulate pan-European personal pension products is that of a Regulation.

Apart from the direct applicability as a main characteristic, it also implies a top-down approach: the PEPP product is an European product aimed at establishing a feasible capital market on which long-term, additional, voluntary personal saving pension products are circulating. It is, de jure, not a Dutch third pillar product. Nor is the PEPP another national PPP. There is simply no EU definition of 'pillars', and as said above, the PEPP is – except for e.g. the taxation-governed by EU law.

A second point is related to the IORP. Dutch DB IORPs are not exempted (entirely) from covering biometric risks. Therefore – and for other reasons it is questionable whether those IORPs will offer PEPPs. A DB IORP cannot in principle ringfence.[56] Thus the PEPP scheme cannot be legally separated from the other schemes the DB IORP operates. Cross-contamination between the PEPP and the other schemes might then occur.

In order to facilitate this feature, the Pension Act provisions on separation of responsibilities could be altered. Consequently the system of mandatory participation seems indeed - prima facie - to be breached. Seems, because we didn't in-

[55] As referred to in part 2 of this working paper; See also: BNC fiche, p.7.

[56] See for more detail: Hooghiemstra, S., Meerten (van) H., "PEPP – Towards a Harmonized European Legislative Framework for Personal Pensions": https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2993991, as referred to in footnote 12.

vestigate this thoroughly.

But given the possible quod non of the Pension Act-route, (a Dutch DB IORP offering a PEPP might lead to amending the Pension Act) another route will be investigated: the Act on Financial Supervision-route.

3.3. Focus area 3: Route 2: the Act on Financial Supervision-route

Rules concerning the PPI are – besides the Dutch Pension Act - laid down in the Act on Financial Supervision (AFS) .

The definition of a PPI is stipulated in Article 1:1 of the AFS. It defines a PPI as an undertaking that has been set up with the aim of executing DC schemes and other schemes in which the premium pension institution does not bear any insurance risk that has been classified as occupational pension schemes under the applicable legislation. Article 3:36 of the AFS refrains a PPI from taking on other activities than authorised ex Article 2:54g (1) of the AFS.

The PPI is an institution that fits within the framework of the IORP Directive. It was established with the purpose of providing labour related pension benefits. Back in 2008-2009, the novelty was the given that in Dutch law the PPI only focussed on the accrual phase of Dutch DC schemes.[57]

A PPI can operate pension schemes which are governed by applicable national social and labour law. In order to determine this, in the Netherlands the Pension Act and Obligatory Occupational Pension Scheme Act are guiding[58]. A PPI is in particular, designed to operate pension schemes that do not entail biometrical risks or risk insurance[59]

In terms of the criterion of the exemption to cover biometric risks, there seems no legal reason to withhold a PPI from manufacturing and distributing a PEPP product. The same applies for the link with operating labour related benefits. However, similar with the PPI, the PEPP product and their providers should envisage the pension objective[60].

With the introduction of the PPI in the AFS,

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[57] Explanatory Memorandum, Amendment of the Financial Supervision Act and some other acts in connection the introduction of premium pensions institutions, 2008-2009, 31 891, nr 3, p 4.

[58] In this regard it is intriguing to look at which laws are considered. One could argue that legislation and caselaw concerning consumer protection and Article 38 (consumer protection) of the EU Charter of Fundamental Rights has to be taken into account as well.

[59] See footnote 50, p. 4

[60] See: discussion paper of IOPA. European Insurance and Occupational Pensions Authority, *Discussion Paper on a possible EU-single market for personal pension products,* 16 May 2013, EIOPA/13/241, 7.

a new concept in this act was introduced, being the 'pension participant'. This pension participant is a "natural person who, on the basis of his professional activities[61], will be entitled to receive pension benefits in accordance with the provisions of a pension scheme." This is a broadening of the term pensioner under the Pension Act, with which it was also intended to bring foreign self-employed persons[62] under the concept of participant within the meaning of the IORP I Directive (2003/41 /EC)[63].

However, it is not entirely clear in Dutch law what is meant by 'professional activities', as both the IORP Directive and the parliamentary history of the PPI Act do not deal with this issue. The IORP Directive stipulates that national social and labor law applies to the relationship between the participant and the sponsoring undertaking. This indicates that on the basis of Dutch social and labour legislation, an assessment should be made of 'professional activities'.

That being said, the PEPP-saver is defined in Article 2(3) of the proposal as: (a) a retail client as defined in point (11) of Article 4(1) of Directive 2014/65/EU of the European Parliament and of the Council[64]; (b) a customer within the meaning of Directive 2002/92/EC of the European Parliament and of the Council[65], where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of Directive 2014/65/EU,

A "PEPP scheme", in turn, means a contract, an agreement, a trust deed or rules stipulating which retirement benefits are granted and under which conditions on the basis of an individual retirement savings plan agreed with a PEPP provider[66].

Seen this definitions, it seems justifiable that a when a PPI, offering a PEPP, the PEPP saver can qualify as a 'pension par-

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[61] '*beroepswerkzaamheden*'

[62] With regard to this issue one might wonder whether the separation between so called "second pillar" providers and products and "third pillar" providers and products is set in current legislation. Looking at for instance the matter of "nettoregeling" it is not carved in stone that a self-employed person (participant under the IORP Directive) cannot buy an occupational pension that is tied to the second pillar market. See for instance: https://zoek.officielebekendmakingen.nl/kst-30413-23-b1.pdf.

[63] Directive 2003/41/EC of the European Parliament and of the Council of 3 June 2003 on the activities and supervision of institutions for occupational retirement provision, OJ L 235, 23.9.2003, p. 10–21.

[64] Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU, OJ L 173/349, 12.6.2014, p.349.

[65] Directive 2002/92/EC of the European Parliament and of the Council of 9 December 2002 on insurance mediation, *OJ L009, 15.1.2003, p.3.*

[66] Article 3(4) of the proposal.

ticipant' ex 1:1 AFS.

Following the definition of the PPI, the applicable legislation when the PPI offers the PEPP is first and foremost the AFS and not the Pension Act. The AFS contains also, of course, many provisions regarding consumer protection, which raises the question whether the AFS and its consumer protection should not be included in the definition of 'social and labour law' in the Dutch Pension Act. The summary in the Dutch Pension Act is heavily outdated and therefore not exhaustive[67]. Consumer protection is in our view 'social and labour law' par excellence.

In other words, when a PEPP saver performs 'professional activities', a PPI can offer a PEPP to individuals. This is not in conflict with the IORP Directive (which makes also contracts with individuals possible), nor with the Dutch legislation. `

But how does this interact with Article 3:36 AFS? This Article stipulates that a PPI is not allowed to pursue another business than the business the license was granted for. When the line of reasoning above is followed, Article 3:36 AFS is not applicable. There is simply no activity that the PPI, when offering a PEPP, is pursuing contrary to its license and its main activities. Offering a PEPP fits in the legal definition of the PPI and the IORP II directive.

What remains is the question when a PPI manufactures and distributes PEPPs, could that be perceived as an infringement of the principle of mandatory participation?

Taking into account European case law on mandatory participation and alleged breaches on Article 56 TFEU is it defendable the answer is negative. That is to say, at this point, following the reasoning in case law, there is no ground to state that a PPI manufacturing and distributing PEPPs would breach provisions on mandatory participation.

Article 56 TFEU[68] prohibits all restrictions on the movement of capital and payments between Member States and Member States and third parties.

Cases such as Säger v Dennemeyer and Corsica Ferries France v Direction Générale des douanes[69]support the reasoning that any form of discrimination against a

[67] See for instance case law as discussed in the section on mandatory participation and on consumer rights i.c.w. Article 38 of the EU Charter.

[68] See also preamble 22 of TFEU.

[69] *Säger v Dennemeyer* (C-76/90) [1991] EU: C1991:331 and *Corsica Ferries France v Direction Générale des douanes* (C-49/89) [1989] EU:C:1989:649.

service provider on ground of nationality or other barriers limiting the provision of services is in breach with the principle of freedom to provide services.

Mandatory participation is subject to rulings of the ECJ from several perspectives.[70] The significance of the rulings is to be found beyond the specific area of interest and in coherence with multiple cases.

The case of Albany for example concerned an infringement of provisions of Competition law[71]. The Court reasoned that collective agreement making affiliation to a Dutch pension scheme obligatory falls beyond the scope of competition law[72]. As a result so does the decision by the public authorities to make affiliation to a sectoral pension fund mandatory. Although the Court argued that violation with competition law was present, it also stated that the breach was found justified given the essential social function of the fund[73]. In this case, the Court also delivered a definition of services offered by pension providers[74]: services of general economic interest (SGEI).[75]

Because of the qualification of services offered by pension providers in Albany and AG2R[76], mandatory pension schemes and the French compulsory healthcare costs insurance scheme at stake in AG2R were able to rely on Article 106(2) TFEU. Article 106(2) TFEU provides that undertakings of which services can be qualified as SGEI are subject to the rules on "in particular" competition on the condition their application is not in breach with tasks assigned to them[77].

What does this imply for provisions as stipulated in Article 56 TFEU? Unfortunately, the Court has not yet clarified the relationship between the exception postulated in Article 106(2) TFEU and Article 56 TFEU. What does this mean? As van Meerten reasons:

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[70] Meerten (van), H., Schmidt, E., "Compulsory Membership of pension schemes and the free movement of services in the EU", as referred in footnote 50.

[71] *Albany, Brentjens' Handelsonderneming BV v Stichting Bedrijfstakspensioenfonds voor de Handel in Bouwmaterialen (Brentjens)* (C-115/97-C117/97) [1999] EU: C:1999:434; *Maatschappij Drijvende Bokken BV v Stichting Pensioenfonds voor Vervoeren Havenbedrijven (Drijvende bokken)* (C-219/97) [1999] EU: C:1999:437.

[72] Ibid, points 45 and 61 (first preliminary question).

[73] Ibid, point 122.

[74] Ibid, points 102 and 104.

[75] See: Meerten, (van) H., "The scope of the IORP Directive", in: U. Neergaard, E. Szyszczak, J. W.van de Gronden, M. Krajewski, Social Services of General Interest in the EU. Den Haag: T. M. C. Asser Press, 2012

[76] *AG2R Prévoyance v Beaudout Père et fils SARL* (C-437/09) [2001] EU: C2011:112.

[77] See also Article as referred to in footnote 50.

"Nevertheless, the fact that a certain agreement or action- in this case the request to make participation to a sectoral pension fund mandatory – the government act making such a decision as well as the conduct of the sectoral pension funds, would be acceptable under provisions of competition law does not mean that such matters are equally allowed under the freedom of movement provisions."[78]

In Commission v Germany[79] and Viking[80] the IORP Directive had not been issued yet[81]. One can, though, assume, the application of the exception in Article 106(2) TFEU on, inter alia, the provisions on free movement[82].

In Kattner Stahlblau[83] the Court ruled on mandatory participation in a social insurance scheme for labour-related accident. It stated that although social security schemes are a discretion left to Member States, it must be exercised in accordance with the freedom to provide services. This was not the case at Kattner Stahlbau: here the Court ruled that the way in which the system was set up it would imply an infringement with the Treaty. Such an infringement is only accepted when there are grounds of justification relating to the public interest[84]. This was not the case and therefore the restriction did not stand the test of Article 56TFEU in conjunction with Article 106(2).

Recently the Court reasoned in UNIS[85] that, in the event a Member State's public authority executes an exclusive right the principle of transparency must be taken into account. A ministerial decision to appoint a single body to execute the administration of an insurance or pension schemes is an example of an exclusive right[86]. The principle of transparency originates from the principles on equal treatment and non-discrimination.

The Court states in UNIS that the principle of transparency implies "a degree of public-

[78] See article as referred to in footnote 50, p. 126. See also: Meerten, (van) H. "Vrij verkeer van diensten voor verzekeraars en pensioeninstellingen: Solvency II basic en de verplichtstelling", Tijdschrift voor financieel recht, 7/8, 290–296, 2012.

[79] *Commission v Germany* (C-271/08) [2010] EU C: 2010:426.

[80] *Viking* (C-438/05) [2007] EU C:2007:772.

[81] Furthermore the grounds for justification differ when tested against discrimination on the basis of nationality. Although intriguing, this is not a central point. For a more extensive reading, please consult the Article as referred in footnote 50

[82] Ibid; footnote 50

[83] *Kattner Stahlbau GmbH v Maschinenbau-und metall- Berufgenossenschaft* (C-360/07) [2009] EU: C:2009:127.

[84] A justified breach must also pass the test of proportionality and fit the alleged objective.

[85] *UNIS* (C-25/14) [2015] EU: C:2015:821.

[86] See f.i. *Kattner Stahlbau* as referred to in footnote 53 on Member States' discretion.

ity sufficient to enable, on the one hand, competition to be opened up, and on the other hand the impartiality of the award procedure to be reviewed"[87]. In combination with Viking, this means that the "requirements of fundamental freedom apply not only to actions of public authorities but extend to rules of any nature aimed at regulating in a collective manner gainful employment, self-employment and the provision of services[88]"

So both social partners and public authorities are subject to requirements of fundamental freedom. When we combine this with the ruling in UNIS, it is defendable to assume that the principle of transparency, originating from the principles of equal treatment and non-discrimination as listed in Article 56 TFEU, must be envisaged by social partners too. Applying this line of reasoning to the situation at hand in the Netherlands[89], the principle must be considered. The fact that the Act Bpf does not provide for margin to allow other pension providers, seems not in line with Article 56 TFEU.

To conclude, when the PPI executes only DC schemes that falls outside the scope of the system of mandatory to a pension fund, the relevant (and recent) EU case law seems not to apply to the question whether a PPI PEPP might endanger the mandatory participation. Studying the relevant case law, one simply cannot conclude that this might occur.[90] In the non-mandatory sector, where the PPI operates, the employer has freedom of choice which entity executes the pension scheme. Of course, Article 56 TFEU applies.[91] But a PEPP offered by a PPI as such does not have consequences for the system of mandatory participation.

4. Conclusion

The main question of this working paper is whether a Dutch IORP can be an eligible PEPP provider without infringing the Dutch system of mandatory participation.

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[87] See *Unis*, point 46.
[88] *Viking*, point 55.
[89] The situation being, affiliation made mandatory by only one type of Dutch pension provider: a *bedrijfstakpensioenfonds*.

[90] See for more details and case law: H. van Meerten, E.S. Schmidt, *Compulsory membership of pension schemes and the free movement of services in the EU* (as referred to in footnote 50).
[91] C-678/11, Commission vs Spain "It must be noted that the services offered by pension funds and insurance companies in relation to occupational pension schemes are services within the meaning of Article 57 TFEU. They are services normally provided for remuneration, the essential characteristic of which lies in the fact that it constitutes consideration for the services in question."

The answer is affirmative: the Dutch DC IORP, the Premium Pension Institution (PPI) can offer a PEPP.

In the Netherlands most DB pension funds seem reluctant to comply with the proposed PEPP Regulation because it would disturb the principle of mandatory participation and require amendments of the Pension Act that entails a broadening of the separation of responsibilities. These concerns stem from a political perspective. Legally however, when DB IORPs offer a PEPP, this might lead to a disturbance of the Dutch 'pension infrastructure'. Allowing Dutch DB IORPs to offer a PEPP could potentially open up the second pillar market.

In this working paper this is not explored in depth. Instead, we focussed on the Act in Financial Supervision-route.

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Case C-438/05 Viking

Case C-271/08 Commission v Germany

Case C-360/07 Kattner Stahlbau GmbH v Maschinenbau-und metall Berufgenossenschaft

Case C-25/14 UNIS

A EUROPEAN UNEMPLOYMENT BENEFIT SCHEME: LOOKING FOR REAL ALTERNATIVES*

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Keywords

unemployment, unemployment benefits, EU, EUBS.

Abstract

The first Great Repression of the 21st century, from 2007 to 2013, which saw the collapse of the most important economies in the world, had significant consequences, including high unemployment rates. In the case of the EU and the Eurozone, some particular difficulties had to be overcome, which made the crisis even deeper. The so-called "Eurozone crisis" arrived when several countries assumed private debts from their bailed-out banks. Hence, it started the second part of the depression characterized by the difficulties of these states to repay or refinance their own sovereign debt. The special state of development of the Eurozone contributed in reinforcing the crisis, because some structures had not been worked out and the traditional national tools linked to the monetary policy were no longer available.

In this context, the proposal of the European Unemployment Benefit Scheme (EUBS) was raised. On the one hand, it would act as an automatic stabilizer, that is, giving the Eurozone those kinds of macroeconomic policies to fight against the effects of crisis whose lack reinforced it. On the other hand, it would allow a human face of the European economic governance to be shown, revitalising the social spirit of the European project.

This article analyses the general framework of this proposal from an interdisciplinary

*This paper is inspired in Dullien, S. and Pérez del Prado, D., "How to stabilize the euro area economy without creating political discord: a compromise proposal for a European Unemployment Insurance Scheme", FES, Madrid, 2018. http://www.fesmarid.org/media/2017_FESpublicaciones/Arbeitslosenversicherung_doc.pdf. It is also part of the National Research Project "Un derecho del trabajo para la recuperación: competitividad empresarial y cohesión social" (DER2015-64676-C2-2-P).

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perspective, highlighting his pros and cons and the different varieties which have been introduced. Additionally, it provides the details of one recent alternative that tries to overcome the legal (and political) difficulties to implement this translational scheme.

1. The European Unemployment Benefit Scheme proposal after the Great Recession

The first Great Repression of the 21st century, from 2007 to 2013, which saw the collapse of the most important economies in the world, had significant consequences, including high unemployment rates. In the case of the EU and the Eurozone, some particular difficulties had to be overcome, which made the crisis even deeper. The so-called "Eurozone crisis" arrived when several countries assumed private debts from their bailed-out banks. Hence, it started the second part of the depression characterized by the difficulties of these states to repay or refinance their own sovereign debt. The special state of development of the Eurozone contributed in reinforcing the crisis, because some structures had not been worked out and the traditional national tools linked to the monetary policy were no longer available.

This produced a new phase within the recession, in which the so-called austerity measures played a central role. Without other alternatives and in exchange for financial help, these European countries were forced to reduce their budget deficits severely. The final result was more crisis, higher unemployment and an increasing anti-Europe feeling all over Europe. For example, in the case of Spain, according to Eurostat, the percentage of people declaring their support for the EU decreased from 60% in 2007 to 20% in 2012. For Germany, the support went down from 47% to 30% in the same period.

In this context, the proposal of the European Unemployment Benefit Scheme (EUBS) was raised. On the one hand, it would act as an automatic stabilizer, that is, giving the Eurozone those kinds of macroeconomic policies to fight against the effects of crisis whose lack reinforced it. On the other hand, it would allow a human face of the European economic governance to be shown, revitalising the social spirit of the European project.

In fact, the EUBS proposal has been at the heart of political debate in recent years. In particular, the serious problems suffered by

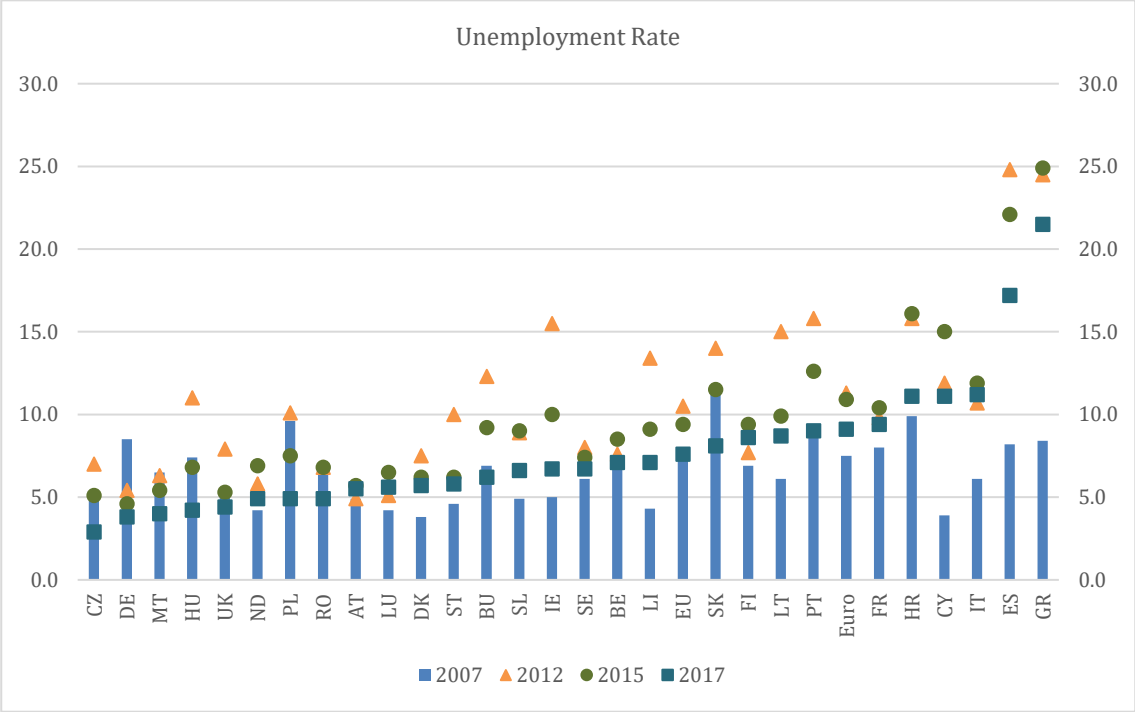
the countries of the Eurozone have resulted in a profound reform of the European economic governance. Nevertheless, the failures have been so important that some voices claim of going toward a greater fiscal integration. Hence, the so-called "Five President Report" (and, previously, the "Four Presidents Report in 2012) suggested the inclusion of a «mechanism of fiscal stabilisation for the euro area as a whole» (Juncker, J. C. 2015). The European Parliament has been also working in this direction and, specifically, regarding the EUBS as the best option within automatic stabilizers (European Parliament 2012).

However, these additional ways to strengthen the Economic and Monetary Union (EMU) and, consequently the European project as a whole, have not succeeded so far. Great disparities among Member States prevent the necessary consensus to implement such an important measure being reached. In other words, national priorities seem to be in conflict.

The first disparity refers to, obviously, the unemployment rate. From a dynamic point of view, whereas some countries, those with the lowest unemployment rates, have seen the number of unemployed people change scarcely (in the case of Germany, its unemployment rate was lower in 2012 -5.4%- than in 2007 -8.4%); other have showed a tremendous volatility. In the case of Greece and Spain, the unemployment rates rocketed from around 8% (in the European average) up to 24 % in 2012[93]. This is also the case of other countries in the south of Europe such as Cyprus, Croatia and Italy. From a static perspective, the differences between countries are huge. Spain and Greece, even with improvements, closed 2017 with unemployment rates that were more than double the level of Member States with the lowest rate (Czech Republic, Malta and Germany). The following graph shows this evolution for all Member States, the EU and the Eurozone.

[93] The maximum was at 27.5% for Greece and 26.1% for Spain in 2013.

GRAPH 1



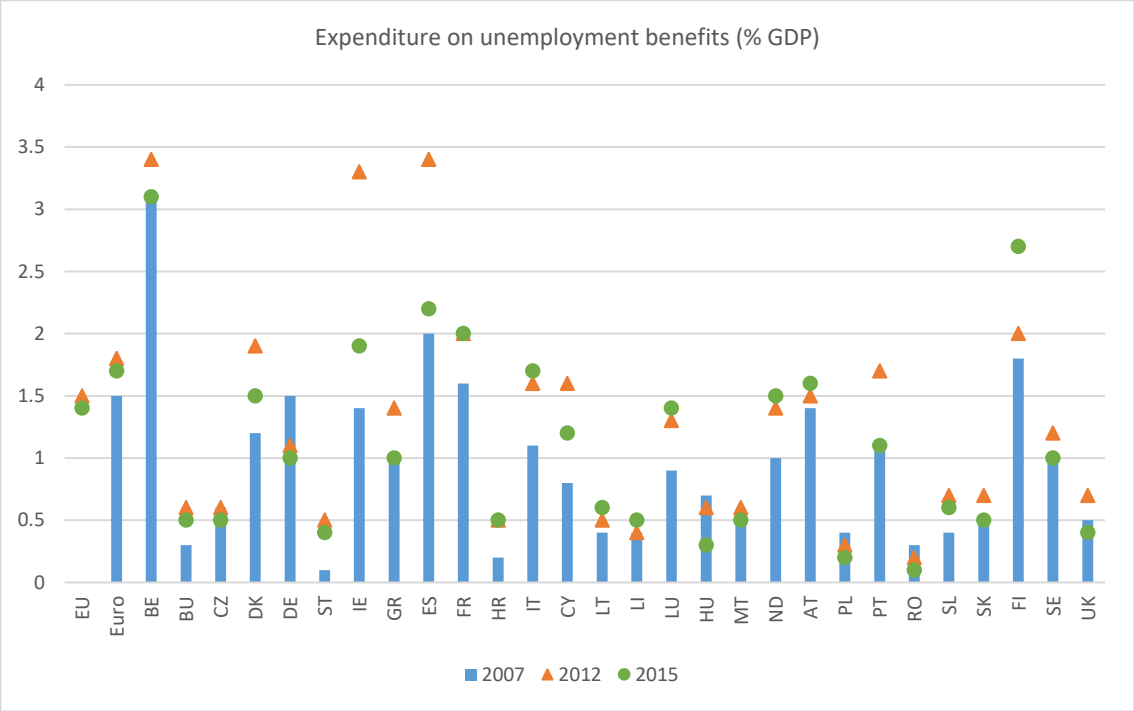
GRAPH 1 Source: own elaboration based on Eurostat.

The second divergence is related to expenditure on unemployment benefits. Logically, the differences in unemployment are translated to the public expenditure which supports national unemployment benefits.

In the case of Spain, one of the countries which suffered the crisis the most, this variable increased from 2% of GDP up to 3% between 2007 and 2012. Then it was reduced to 2.4% at the end of 2016. This evolution is especially important if it is considered that, despite the generosity of the Spanish unemployment system which may be classified as "medium" compared to other European countries, it generated surpluses until 2008 (Pérez del Prado, D. 2014). Consequently, a system which is quite equilibrated was under a "double contradictory pressure" because, on the one hand, more sources were necessary in order to cover the increasing number of unemployed people but, on the other hand, reducing public expenditure was imposed to achieve the deficit objectives for each year. The final result is that the coverage rate was reduced from more than 80% to

55%. This was owing to both the incapacity of the system to keep the level of protection in the context of an over-long recession and the cuts implemented by the Government. The evolution of the rest of Member States, the EU and the Eurozone is shown in the following graph.

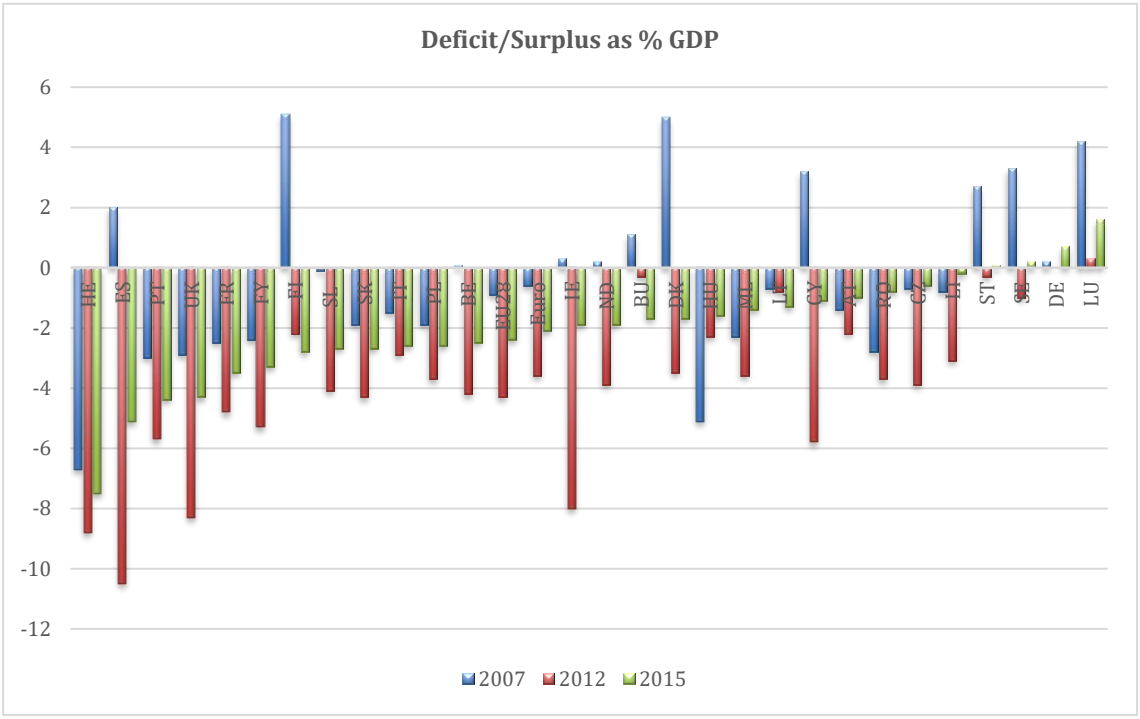
GRAPH 2



GRAPH 2 Source: own elaboration based on Eurostat. Data for Croatia 2007 is 2008. Data for EU, Euro and Poland 2015 is 2014.

Finally and quite related to the previous one, the differences in the general government deficit or surplus are also important across the European Union. The following graph shows the evolution for 2007, 2012 and 2015. In the case of Spain, the situation changed from a surplus of 2% GDP in 2007 to a deficit of 10.5% in 2012. On the other hand, Luxemburg and Germany maintained surpluses during the full recession period.

GRAPH 3



GRAPH 3 Source: own elaboration based on Eurostat.

These and other divergences may explain some of the difficulties in attempting to achieve the objective of implementing the European Unemployment Benefit Scheme (EUBS) proposal, that is, a common unemployment benefit for European countries. Despite some of the aims related to the economic governance being common, the national priorities vary because the situation in each country is very different. Nevertheless, the inclusion of this scheme would be able to produce some important economic benefits for all economies in the EU. This point will be analysed in the following section.

2. Discussing different alternatives from an economic and legal point of view

2.1.The economic perspective: pros and cons

The special difficulties suffered by Eurozone countries during the recession forced them to take some important measures and discuss alternatives to prevent a repeat in the future. Within these proposals, there is a rather extended consensus among economists about the beneficial effects of introducing automatic stabilizers in the Eurozone (since (Marjolin et al. 1975), (MacDoughal 1977), (Padoa-Schioppa & Communities 1987), (Emerson 1992) to, more recently, (Allard et al. 2013), (Alcidi, Giovannini, & Piedrafita 2014), (De Grauwe & Yuemei 2016), among others).

Despite there exist large variety of options (regional policies, public investment, Eurobonds, special funds or progressive taxation), a common unemployment benefit scheme has been considered by different authors the most attractive alternative. There are a number of important reasons: a) it represents a type of expenditure that is anti-cyclical; b) it acts automatically in the event of recession; c) it has a high multiplier effect; d) it is a mechanism which acts very quickly; and e) it provides income support to those individuals in society who bear a large part of the social costs.

However, this debate appears and disappears in waves, according to the social and political situation during and after and an economic crisis (this was the case in the 70-80's, 90's and nowadays). Consequently, from a political perspective it would be necessary to keep the discussion as a structural part of the economic construction of the EU and Eurozone and/or using the current situation in different European countries as argument.

The different proposals regarding the European Unemployment Benefit Scheme (EUBS) may be analysed as follows:

On the one hand, it is possible to find two approaches regarding the mechanism itself. Some authors propose an "individual" or "direct" EUBS (also called "genuine"), that is, the classical unemployment benefits covering unemployed individuals directly by the European level. Others prefer the option of a "State" or "indirect" EUBS (also named "equivalent"), in other words, a scheme consisting in supporting the States' systems and, consequently, providing protection to individuals indirectly.

On the other hand, the debate also con-

cerns a number of economic technical issues such as financing and cost, prevention from moral hazard, countries involved or stabilization impact. These are present in all proposals without considering the type. Nevertheless, these studies rarely comprehend other kinds of additional technical analysis, such as the legal viability of the hypothetical implementation of each alternative.

This aim does not aim to analyse the details of all these versions, but the advantages and disadvantages of each one must be highlighted in order to focus the main points of the debate. Consequently, some elements of the different versions and proposals will be lost in exchange of a clearer explanation.

Concerning both types of EUBS, on the one hand, the indirect version requires the least grade of intervention or harmonization so, *a priori,* it would be the easiest form of implementation from a legal point of view. However, it also means some disadvantages such as "free riding" (del Monte, M. & Zandstra, T. 2014), that is, countries would be incentivized to increase the generosity of their unemployment benefit system considering it is covered by the Union.

On the other hand, the direct version means a higher grade of integration, which is both an advantage and a disadvantage. The first because it strengthens the effects attributed to a supranational coordinated system and the European project itself; the latter, because the legal (and political) difficulties also rise. These does not only comprehend the modification of the treaties, the creation of new regulation and new sources of finance, but also the reform of national rules in order to coordinate them with the European system and both of them with active employment policies.

Regarding technical issues, financing is probably the most controversial one. Here, it is possible to find three different types of mechanisms. Firstly, the creation of new taxes or contributions, such as a payroll tax (Dullien 2012) (Dullien 2013) or a corporate tax (Pisani-Ferry, Vihriälä, & Wolff 2013). These alternatives have the advantage of being an exclusive source of the system and its close relation with it and the beneficiaries. Additionally, in the first case, it tries to replicate the national system at European level. On the other hand, the main disadvantage concerns the increase of labour or corporate tax and its effects on labour and capital factors. Second, it is also possible to finance EUBS by specific

contributions to a fund or budget, as percentage of GDP, fixed or variable (Beblavý, Gros, y Maselli 2015) (Dolls et al. 2015). This alternative avoids the problem of taxing productive factors, but it is not directly linked to the system and its beneficiaries. Finally, financing EUBS by debt and, particularly, by the so-called "Eurobonds" have been also on the table (Beblavý, M. & Lenaerts, K. 2017). However, this is probably the most controversial option and it attracted strong opposition from those who do not accept the mutualisation of the debt in the Eurozone.

2.2. The legal approach: looking for viable alternatives

2.2.1. The legal base of the EUBS proposal: a first approach

From a legal perspective, transforming these proposals into a viable project means the consideration of many legal problems, some of them closely related to the political ones. Following the same methodology, only the most common and practical ones will be analysed. Hence, the first point is trying to fit the proposals in the European legal system, taking into consideration the different ways offered by the European Law.

The first one is the Treaty, which considers social policy (social security) as a shared competence (article 4 TFEU), but in which States keep a strong intervention (Pérez Domínguez 2017). Accordingly, the first step in order to implement a EUBS proposal is to determine if the Treaty offers a legal base which is enough to set this mechanism. If the proposal remains within the limits of the Treaty, that is, the competence of the EU, it would be possible to develop it through the legal mechanisms explained below. On the contrary, if the project goes further than these limits, reform of the Treaty (primary legislation) would be needed, which means some additional political difficulties. Actually, this is the case of the projects which propose to substitute national systems with a European one because article 153 TFEU sets the EU's role as supporting and complementing the activities of Member States in the field of social security and social protection. Nevertheless, considering the grade of intervention in the Treaty, the requirements may differ.

Concretely, two procedures are set. The "ordinary revision procedure" concerns key amendments (such as increasing or reducing the competences of the EU) and it requires a rather complex procedure includ-

ing the creation of a Convention, a Conference of representatives of the governments of EU countries and, finally and frequently, the call for a referendum if it is required by national constitutions. The "simplified revision procedure" refers to internal policies and actions (for example, agriculture and fisheries, internal market, border controls, economic and monetary policy) and aims to facilitate further European integration and avoids the need to celebrate the Convention and the Conference. However, unanimity in the Council is required and the competences of the EU may not be extended by means of this procedure.

Within the limits of the Treaty reforms, when national competences are involved or there are serious doubts about it, some "innovative" and intermediate tools have been used recently, as in the case of the so-called "European Stability Mechanism" (ESM). In order to implement it more easily, avoiding the ordinary procedure, a minor reform of the Treaties (by simplified procedure) was applied (concretely, on the article 136 TFEU), whereas an international treaty among Member States created an intergovernmental organization, which operates under public international law, to provide access to financial assistance programmes for member states of the Eurozone in financial difficulty. In other words, it meant the creation of a new tool outside the EU legal system but connected to it. Despite it being a rather controversial tool (Craig, P. 2013), it has been declared fully legal by the CJEU (C-370/12, *Pringle Case*). This "third way" may be also taken into consideration, but keeping in mind the limits set in *Pringle.*

Secondly, within the framework of the Treaties, it would be possible to use other institutions already created within the EU legal system, which is the easiest way because it means the reform of secondary legislation. The Treaty provides two options (Miranda Boto 2011): a) harmonization that, according to article 4 TFEU, would require the inclusion of the issue (as it is the case) in the Treaty; b) another possibility coordination (article 5 TFEU). Both mechanisms have a different scope.

Whereas harmonization supposes the most intense way of approximation of national legislations, setting some minimum standards or common rules; coordination implies a lower level of incidence, because it aims to achieve some general common objectives, implying minor changes on national regulations (Herrero Suárez y Peñas Mo-

yano 2013). Considering the magnitude of some proposals, the latter does not seem strong enough to implement them. However, this does not mean that coordination is not useful as a necessary complement of the EUBS project.

Concretely, the grade of development of the current Regulation (EC) No 883/2004 of the European Parliament and of the Council of 29 April 2004 on the coordination of social security systems is still so far from its maximum possibilities. For example, an unemployed person who satisfies the conditions of the legislation of the competent Member State for entitlement to benefits and who goes to another Member State in order to seek work, there shall retain his entitlement to unemployment benefits for a period of three months up to six months only, depending on the circumstances. In the same sense, the use of social security contributions in another country different to which they were generated is also limited by the fact of contributing and losing an employment in the latter. These and other limits are explained, among others, by the mistrust of the monitor mechanisms of other Member States and the desire of controlling and limiting the unemployment benefits expenditure and its effects from a geographical point of view. Nevertheless, this produces a negative effect on job mobility, and most importantly for the EUBS project, it strongly limits unemployment benefit schemes integration, which helps in the creation of higher levels of protection.

On the other hand, regarding harmonization, its potential depends on the kind of EUBS proposal. Obviously, those focused on the creation of an autonomous European system fall outside the limits of this legal mechanism, whereas others which aim to complement a national system may be included under its coverage because it would be supporting national programs in setting some minimum thresholds.

However, some important limits concern this way. These depend on the kind of proposal, even though some of them must be highlighted. Firstly, according to article 153 (4) TFEU, the provision of the EU adopted in the social security and social protection field «shall not affect the right of Member States to define the fundamental principles of their social security systems and must not significantly affect the financial equilibrium thereof». Second, the tool set to harmonize legislations is the Directive, which is not probably the best solution in order to

achieve the objective of EUBS ([94]). Nevertheless, it would be adequate to set some minimum and common requirements in to access to financial help (following the American model), which requires its combination with other legislative measures. Anyway, the creation of European institutions on the base of national regulation is not a novelty, as the case of European work council shows. Finally, the use of this legal way also requires the especial legislative procedure and, consequently, the Council shall act unanimously, after consulting the European Parliament and Economic and Social Committee and the Committee of the Regions.

2.2.2. Discussing different alternatives from a legal perspective: pros and cons

On these basis, the objective of implementing a EUBS requires analysing the different alternatives proposed by the economists (mainly) from the legal alternatives perspective.

Concerning the two main models, on the one hand, , despite genuine EUBS seems to have a greater stabilization impact and means the most developed model from the European integration point of view, it would face some important legal obstacles. The most important one would be the reform of the Treaty by the ordinary procedure, what requires national acceptances and, consequently, in some cases, its approval by referendum. Therefore, any proposal which comprehends the modification of the current *status* of competences, implies the right of Member States to define the fundamental principles of their social security systems, or significantly affects the financial equilibrium thereof will be covered to this procedure. Despite the issue being really attractive for most citizens, showing the social face of Europe after a hard and long period of crisis, the political environment is not propitious considering the results of referendums in the last decade. Special difficulties arise in the Central and Nordic countries, in which this kind of measures are not really popular (Hacker & Cédric 2017).

Alternatively, the equivalent EUBS seems to be easier compared to the previous one, but technical difficulties are also important. Firstly, it is not clear that the modification of the Treaties may be avoided. In the best situation, the simplified procedure would be

[94] Other ways, such as the paragraph k), «the modernisation of social protection systems », which requires the ordinary legislative measure, has never been used in the field of unemployment benefits and it contents the specific exception of social security and social protection of workers.

applied, which means unanimity in the Council. Second, in the case of the amendment of the Treaties not being necessary, it is not clear if the classical methods of regulation and, specially, harmonization would be enough to build the EUBS project. Finally, even considering the limits of harmonization, different requirements connected to the legal base chosen to develop the proposal must be also satisfied.

A "third way" (symbolized by example of ESM) would also be possible, with or without the modification of the Treaties, by sending the regulation to an extra-EU (or extra-EMU) mechanism. However, as the CJEU sets in *Pringle*, this type of alternative may not be used to overpass the Treaties, infringing the EU Law. Consequently, the requirements of the case law must be fulfilled and, finally, the competences cannot be altered.

But the technical difficulties regarding the implementation of each model are also translated to the different varieties of each one. For example, regarding finances, article 311 TFUE sets that the creation of new categories of own resources require a Council's decision, adopted by the special legislative procedure, unanimously and after consulting the European Parliament. However, this is not enough, because it adds that the decision shall not enter into force until it is approved by the Member States in accordance with their respective constitutional requirements. So, again, some national problems may raise. This would be the case of a new system of contributions or payroll taxes, but also any kind of new contributions, as some proposed as percentage of GDP.

Consequently, the easiest way to implement the EUBS would be the equivalent model. Nevertheless, the legal requirements to develop it depend on the type of proposal[95]. The next section will use a recent proposal to exemplify it.

3. How to implement the EUBS: a recent proposal

3.1. The proposal: a general description

Recently, (Dullien, S. & Pérez del Prado, D. 2018) have suggested a "compromise proposal" which is focused on avoiding political discord. This is based on an equivalent system financed by payments from countries' budget. Under such a scheme, each country would pay 0.1 per cent of its

[95] (Repasi, R. 2017) analyses the legal viability of several options.

GDP each year into a common European unemployment fund. Eighty per cent of its pay-ins would be deposited in a national compartment; whereas the other twenty per cent would polled into a "stormy day fund" (a common compartment for very large shocks).

Pay-outs would be made whenever the unemployment rate increased more than 0.2 percentage points above its average rate for the previous five years. Concretely, if unemployment increased by more than 0.2 percentage points, countries could draw money from their national compartments. Nevertheless, whether a country were hit by a very large shock, defined as increases in the unemployment rate of 2 percentage points or more, additional payments would be made from the "stormy day fund".

Within this framework, each country would be allowed to run a cumulative deficit in its national compartment of up to 5 percent of its GDP. In this first instance, this deficit would be financed by loans from other national compartments. In the event that all funds should be depleted, the scheme would be replenished by borrowing in financial markets. The system would thus be allowed to issue bonds, backed by future contributions as collateral. Finally, in order to counter the fear of permanent transfers, a dynamic claw-back system would be part of the system.

Regarding its legal implementation, this report also borrows elements from prior studies, trying to adapt them to the particular characteristics of this proposal. Despite legal literature is limited, it shows a clear trend. Whereas initial analysis concluded that EUBS would require the amendment of the Treaties (European Commission 2012) (Fuchs, M. 2013) (Repasi, R. 2013)[96]; nowadays, most papers set the contrary position, that is, it is possible to materialize most of the proposals on the bases of the current EU primary and secondary legislation, without changing the Treaties.

This report is not an exception. Consequently, within the framework of the Treaties, it suggests some alternatives supported by use existing legal mechanisms of the EU Law. In order to clarify the analysis these mechanisms, they are classified considering a) the payment side of the scheme and the conditions linked to it and b) the financing issues.

[96] In this last case, the author shows some doubts about the possibilities given by Articles 352 and 153(1) TFEU.

3.2. Legal alternatives for its practical development

3.2.1. Options for the payment side

Concerning the payment side, there are four main possibilities: the multilateral surveillance procedure (Article 121(6) TFEU), fiscal assistance in case of crisis (Article 122 (2) TFEU), funds concerning social cohesion (Article 175 (3) TFEU) and the so-called "flexibility clause" (Article 352(1) TFEU).

Firstly, multilateral surveillance is a macroeconomic stabilization instrument for policy coordination. This coordination requires Member States to follow the recommendations given by Commission's guidelines (Article 126(2)). Furthermore, Article 121(6) prohibits Union legislator to introduce other sanctions than those foreseen by Article 121(4). This means the whole multilateral surveillance procedure is built on the base of non-binding rules, what makes it an inappropriate instrument to set the EUBS. This conclusion does not change by the fact that Article 136(1) permits to «adopt measures specific to those Member States whose currency is the euro» because its scope is also the multilateral surveillance procedure (Repasi, R. 2017).

Second, the Treaty permits to grant, under certain conditions, Union financial assistance to the Member States in difficulties or seriously threatened with severe difficulties (Article 122(2)) TFEU. This clear connection to economic and financial problems makes it adequate as legal base for EUBS, especially for the equivalent type. However, it faces two kinds of limitations. On the one hand, it would be appropriate for the most severe situations (Repasi, R. 2017)[97]. On the other hand, it only and would require the parallel adoption of "certain conditions", what implies that financial assistance can only be granted on a case-by-case basis (Beblavý, M. & Lenaerts, K. 2017) and, therefore, it prevents from applying the mechanism automatically according to a certain trigger, as it is the case[98].

Third, some authors have proposed that the legal framework of funds devoted to social cohesion (Article 175(3) TFEU) would be another legal base to develop any kind of equivalent EUBS (Ferrante, V.

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[97] This paper sets this legal base would be adequate for an equivalent EUBS with a trigger of >2 of unemployment rate, which would only permit to activate the stormy day fund in our proposal

[98] However, the Council has a wide discretion to define what economic difficulties is and, additionally, it is also possible to think about *ex ante* conditions and not only *ex post,* what would facilitate the application of this Article.

2016) (Ministero dell'Economia e delle Finanze 2016) (Ministero dell'Economia e delle Finanze September 2016a). According to the first paragraph of Article 175 TFEU, the Union shall support the achievement of some objectives, among others social cohesion, by the action it takes through specific Funds. Nevertheless, it will also be possible to adopt «specific actions» outside the Funds if they are necessary and in accordance with the ordinary legislative procedure (paragraph 3). According to these studies, this "specific actions" could include everything needed to implement EUBS. Nevertheless, other authors reject this legal base because the equivalent system focuses on the macroeconomic stabilization effect in times of crisis and, consequently, it would not be a proper mechanism to reduce social and economic disparities related to social cohesion (Repasi, R. 2017)

Finally, the so-called "flexibility clause" seems to be the legal tool which raises wider consensus. According to Article 352(1) TFEU, its application requires to fulfil four conditions. First, the Union action has to be necessary to achieve the «objectives set out in the Treaties». In the case of EUBS, Article 3(3) TEU calls for establishing «a highly competitive social market», aiming at «full employment and social progress» and promoting «social justice and protection», «economic, social and territorial cohesion» and «solidarity among Member States» [99]. Second, this action must be developed «within the framework of the policies defined by the Treaties». In other words, it must be at least a shared competence, what permits Union to act. Furthermore, it is possible to justify that European level is the most appropriate to compensate asymmetric shocks[100]. Third, the Treaties must not provide for the necessary powers. The reference to the «policies defined by the Treaties» has to be understood as the use of this clause is possible if there are no other possibilities in the Treaties. As none of the previous alternatives are a clear legal base, this would be the only solution. Finally, the Court of Justice of European Union established a further limit, which is the prohibition of an im-

[99] These objectives have to be read, among others, in conjunction with Article 9 TFEU, according to which in «defining and implementing its policies and activities, the Union shall take into account requirements linked to the promotion of a high level of employment, the guarantee of adequate social protection, the fight against social exclusion, and a high level of education, training and protection of human health».

[100] This is clearly kinked to the principle of subsidiarity (Article 5(3) TEU).

plicit Treaty amendment[101]. This means that the distribution of competences must not be altered, and constitutional saving clause must be respected. In this particular field, the latter requires shall not affect the right of Member States to define the fundamental principles of their social security systems and must not significantly affect the financial equilibrium thereof (Article 153 (4) TFEU)[102]. Concerning this issue, it must be highlighted that that a regulation establishing a EUBS on the basis of Articles 352(1) TFEU always has to be adopted by unanimity in the Council, so Member States may raise their veto to safeguard their constitutional clause.

Nevertheless, Article 352 must not be applied solely because it is subject to the bail-out clause embedded in Article 125 (1) TFEU. Under this clause and according to the interpretation given by *Pringle* case law[103], the transfer of funding from the EU level to Member States, in case such a transfer is not explicitly foreseen by the Treaties, must be justified by the adoption of any kind of contagion, such as the implementation of structural reforms. Concretely, three kinds of mechanisms have been consider adequate to function as a justification: experience rating, claw-back and minimum requirements with regard to activation policies (Beblavý, M. & Lenaerts, K. 2017) (Repasi, R. 2017).

According to this proposal, the combination of national compartments and a dynamic claw-back system would enough to fulfil the requirements of conditionality set Article 125(1) TFEU. Additionally, other mechanisms would be also compatible, such as the experience rating mechanism or setting minimum requirements related to active employment policies.

3.2.2. Options for the financing side

Regarding financing side, there are two possibilities. On the one hand, EUBS may be financed by the general Union budget. On the other hand, it is also possible to finance it by a dedicated fund outside the Union general budget.

Concerning the specific line within the budget, Article 311 (2) TFEU sets Union budget has two kinds of sources: "own resources" and "other revenues". Whereas "own sources" are primarily intended to finance the general Union budget, "other revenues" may be used to finance a specif-

[101] CJEU, Opinion 2/94 [1996], ECR I-1759, para. 30.
[102] And this links to the principle of proportionality (Article 5(4) TFEU).
[103] CJEU Case C-370/12, Pringle, ECLI:EU:C:2012:756, paras 130-136.

ic purpose. The latter category is chosen because it has two clear advantages: its regulation is more flexible and it may be dedicated to a specific purpose.

On this basis, new contributions should be created and defined by the same legal act that established the legal framework for the payments (and the whole EUBS), which the contributions should finance. In this regard, financial contributions paid by EU Member States, which are additional to the contributions paid by Member States under the Own Resources Decision[104], must, in principle, follow the rules given by Article 311(3) TFEU. In other words, the especial legislative procedure is required and, consequently, the Council shall act unanimously, after consulting the European Parliament and Economic and Social Committee and the Committee of the Regions and in accordance with their respective constitutional requirements.

Nevertheless, in the existing Union agencies (such as the European Bank Authority), it is possible to find some precedents in which this procedure is avoided by using a different legal base. Consequently, it would be possible to create these new contributions on the base of the above mentioned Article 352 TFEU, which only requires unanimity in the Council (Repasi, R. 2017).

On the other hand, States' contributions may finance an external fund. In this regard, the European Social Fund may play an important role, because according to article 162 it aims to «improve employment opportunities for workers in the internal market and to contribute thereby to raising the standard of living». The main problem is that ESF has never been used for passive employment policies, only for active ones. Consequently, its use would require a profound reform, introducing some elements which have been strange to its content so far and, probably, the amendment of the Treaty as well. In any case, this fund would be an effective instrument in order to develop measures on active employment policies to complement the EUBS.

Nevertheless, there are other possibilities whose application seems to be easier. For example, Member States could sign an international treaty to create an intergovernmental organization, which operates under public international law, to provide access to financial assistance within the EUBS framework. This was the case of the so-

[104] 2014/335/EU, Euratom: Council Decision of 26 May 2014 on the system of own resources of the European Union. OJ L 168, 7.6.2014, p. 105–111

called "European Stability Mechanism" (ESM). Moreover, it would be also possible to create, using Article 352 (2) TFEU as legal base, a Union agency with a legal personality distinct form the Union, whose budget is the fund.

3.2.3. Other alternatives

Finally, along with all these alternatives and comprehending both payment and financing sides, the report suggests that it would be possible to implement the proposal by either concluding an international agreement amongst a subset of Member States (which is a solution rather similar to one mentioned above but with a broader scope[105]) or by establishing an enhanced cooperation according to Article 20 TFEU. This option would permit to avoid the requirement of unanimity in the Council.

In the first case, the CJEU decided in the mentioned *Pringle* case, that the Member States may conclude this kind of international agreements in areas in which the Union has not already regulated. Additionally, some other conditions must be respected. Accordingly, international agreements must: not modify Primary law; be in compliance with Primary law and Secondary law; affect exclusive Union competences or shared competences; only be concluded if the Union legislative procedure failed or is likely to fail; must not circumvent Union legislative procedure or the Treaties.

In the second option, the most relevant obstacle is the prohibition under Article 326(2) TFEU to undermine the internal market or economic, social and territorial cohesion. However, some authors have conclude this is not a real barrier considering EUBS would not impede the social cohesion of the Union but only strengthen the one between the participating Member States (Repasi, R. 2017).

4. Conclusions

The debate on the creation of a common unemployment benefit scheme for the EU or the Eurozone is circular. During economic crisis it emerges as an intelligent solution to combine social protection and efficient macroeconomic policies. After that, it fades until the following economic collapse. The so-called "Great Recession" has emphasised the necessity of creating macroeconomic stabilizers for the Eurozone, as a part of the plans for achieving a deeper and fairer Economic and Monetary Union.

[105] Actually, this would be another possibility even for all Member States as the ESM shows.

The EUBS has been in the core of the political debate again.

Economist were the first ones in analysing its viability, assessing the pros and cons of this proposal from both national and European perspective. Now, it is also possible to find deep legal analysis. As it was mentioned before, whereas initial studies concluded that EUBS would require the amendment of the Treaties; nowadays, most papers set the contrary position, that is, it is possible to materialize most of the proposals on the bases of the current EU primary and secondary legislation, without changing the Treaties. These legal alternatives open a new stage in the debate: a decisive leap towards the political arena.

Both the European Commission and the European Parliament have shown their interest in this proposal, promoting these studies and analysis in different levels and context. Some discussions have been also held but without producing any concrete decision. The scientific debate seems to be mature enough to generate a rigorous, concrete and serious political discussion about the potential implementation of the EUBS.

The recovery is a good moment to hold this kind of public debate without any kind of inherence related to the difficulties of the crisis. Nevertheless, this lack of pressure is usually the cause of its failure. As historical precedents show, economic recoveries also have the risks of underestimating the problems which must be solved, postponing its solution of a further opportunity which never arrives.

But this recovery also shows additional difficulties which prevent from having this inevitable discussion. The emergence of nationalisms and populisms all over Europe (and in other parts of the Globe) makes that adopting significant decisions about European integration, as the EUBS, is something as difficult as the times we are living.

However, each historical context has its own particularities. Other problems concerned Europe in the past, but political determination achieved to overcome them. The current European project is the result of those decisions and its future will depend on the political determination and strong resolve.

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IDIOSYNCRATIC MOMENTUM IN COMMODITY FUTURES

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Keywords

Momentum, risk premium, idiosyncratic return, commodity futures, equity markets, factor investing

Abstract

This paper provides novel findings on idiosyncratic momentum in commodity futures. Momentum strategy that forms portfolios on the basis of commodity-specific returns delivers compelling investment returns which are substantially more robust and superior to total return momentum on an absolute and risk-adjusted basis. Furthermore, idiosyncratic return momentum is materially more persistent than total return momentum in that it delivers statistically significant positive returns over longer term horizons including ranking periods of up to 24 months. A set of commodity specific and equity markets inspired factors are examined. Notably, the results corroborate that hedging pressure and term structure are sources of risk premium in commodity futures. The analysis in this chapter expose that momentum in commodity futures is fundamentally different to the momentum effect in equity markets. Specifically, momentum in commodity futures is entirely attributed to the momentum effect in long-only portfolios whilst none of the short-only strategies' returns are either profitable or statistically significant. Lastly, the two types of long-only momentum significantly outperform a passive investing into a broad market index such as S&P GSCI.

Preamble

Commodities have long been recognized by institutional investors for their diversification benefits and inflation protection properties. Over the long term correlation between commodities and traditional asset

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classes such as listed equities and bonds has been close to zero making commodities ideal as a diversifier within balanced portfolios. Yet many investors got disenchanted with the returns of their commodities portfolios over the past years. Is passive index tracking approach, which has been exhibiting a tremendous growth in traditional asset classes over the last ten years, an efficient way of gaining an exposure to commodities as an asset class or harvesting market risk premium? This paper examines active investment approach to commodities, in particular an idiosyncratic momentum strategy. Furthermore, it addresses the presence of systematic risk factors in commodities.

1. Introduction

Momentum effect, which is a tendency of recent winner stocks to continue to rise and the recent loser stocks to continue to fall, is the most puzzling anomaly in the asset pricing literature. Momentum strategy, first formally documented in the U.S. equity market by Jegadeesh and Titman (1993), implemented by buying past winners and selling past losers, is a bet on past returns predicting a cross-section of future returns. Fama and French (1996) posit that their three-factor model which includes market risk, size and value premiums cannot explain returns to momentum and call it a 'premier anomaly'. Two explanations have been provided in the literature as to what causes momentum effect - behavioural and risk-based. To date, however, there is no consensus on what exactly causes momentum effect in security prices. Since it was first documented in the literature the research on momentum investing has grown exponentially. Yet, the literature on momentum is dominated by the evidence from equity markets. With the phenomenal rise of factor investing across asset classes over the recent years, the research on momentum style and factor investing more generally outside equity markets is becoming ever more important for academics and practitioners alike. Commodity futures provide an interesting case for momentum style research. Firstly, empirical evidence suggests that unlike returns to equities, returns to commodity futures do not follow random walk (Stevenson and Bear 1970). This implies that investment strategies based on past performance patterns may lead to profitable outcomes. Secondly, there are strong implementation ad-

vantages of momentum in commodity futures over equity markets. Momentum investing in equity markets entails high portfolio turnover, and as a result, higher trading costs relative to other factor styles. In comparison to equity markets, trading costs in commodity futures are very low. Furthermore, in contrast to equity markets there are no constraints on short-selling in commodity futures.

We make several important contributions to the research on momentum style, systematic factors and active investing in commodity futures. Firstly, we provide novel findings on the idiosyncratic momentum effect in commodity futures. Conventional momentum strategy, as documented in the seminal work by Jegadeesh and Titman (1993), selects securities based on total returns over a ranking period. In contrast, idiosyncratic momentum strategy selects stocks based on its idiosyncratic returns over a ranking period. The rationale behind idiosyncratic returns momentum stems from the extensive empirical evidence on time-varying momentum exposure to systematic factors (Grundy and Martin 2001) and pronounced momentum crashes that a conventional momentum strategy occasionally suffers from (Daniel and Moskowitz 2016). Specifically, conventional momentum loads positively on systematic factors when these factors performed well in the ranking period and, conversely, it loads negatively on the factors that performed poorly in the ranking period. As a result, if the sign of a factor's returns that the momentum strategy has exposure to changes between a ranking and holding period, the conventional momentum suffers. Blitz et al. (2011) and Chaves (2016) document a robust performance of idiosyncratic momentum in the US and 23 international equity markets. To the best of our knowledge, this paper is the first to empirically examine idiosyncratic momentum in commodity futures. We find that momentum strategy that selects commodity futures contracts on the basis of idiosyncratic return over a ranking period is a substantially more robust strategy that consistently yields higher returns on absolute and risk-adjusted basis than total returns momentum.

Secondly, our analysis exposes that commodity futures momentum is starkly different to momentum in equity markets. Despite more than 20 years of research on momentum, by far the major part of the existing literature is focused on cross-sectional total return momentum in equity

markets whilst the research on momentum in other asset classes remains underdeveloped. Notably, commodity futures have been included in studies on momentum alongside other classes (Moskowitz et al. 2012, Georgopoulou, A., and J. Wang. 2016). Commodity futures however have distinct features compared to equity markets. Specifically, commodity returns are driven by factors that are very different from those affecting stocks and bonds. Further, there are material differences in the market microstructure and trading between commodity futures and cash equities. We hypothesize that the momentum effect in commodity futures may have a different manifestation to the momentum effect in equity markets. Our empirical analysis corroborates this conjecture. Namely, momentum in commodity futures is entirely ascribed to long-only portfolios. This is in a stark contrast to equity markets where empirical studies document strong or dominating attribution to the strategy's profitability by short portfolios. Specifically, long-only momentum in commodity futures is a profitable and robust strategy across two types of momentum, total return and idiosyncratic, and a range of implementations whist none of the short portfolios deliver positive or statistically significant returns. Long-only portfolios consistently deliver a significant average annualized return of 10%. In contrast, short portfolios consistently detract value. Notably, the returns to portfolios that short losers are consistently negative which, in the presence of statistical significance, would be indicative of short term reversal patterns. As a result, a total return long-short momentum strategy yields statistically significant returns in only 4 out of 144 implementations with an average annualized returns of 7% across statistically significant strategies. Idiosyncratic momentum yields a substantially improved performance in the long-short implementation relative to a conventional total return momentum. Namely, the strategy is statistically significant in 21 out of 144 implementations with an average annualized return of 12.3% across statistically significant strategies. Further, the idiosyncratic long-short momentum yields a Sharpe of 0.65 versus 0.36 for total return long-short momentum.

Our findings with respect to long-only momentum are consistent across both total return and idiosyncratic return momentum. Whilst only 4 out of 144 total return long-short strategies are statistically significant with an average annualized return of 7%,

long-only total return momentum yields an average annualized return of 10% and is statistically significant in 51 out of 144 implementations. Remarkably, the idiosyncratic return long-only momentum generates 10% annualized average return and is statistically significant in 126 out of 144 implementations. Furthermore, idiosyncratic returns momentum is also highly persistent in that it holds also across long horizons including 24 months ranking periods. Overall our findings show that a commodity futures investor would have benefited from implementing long-only momentum, especially an idiosyncratic long-only momentum which is a strikingly robust and profitable strategy, as opposed to momentum in its traditional total return long-short format. Both type of long-only momentum substantially outperform a passive investing in S&P GSCI on absolute and risk-adjusted basis.

Our analysis of factor-mimicking portfolios provides important empirical evidence on the systematic factors in commodity futures. In contrast to equity markets, where there is virtually a universal evidence on the existence of several risk premia, the consensus on systematic factors in commodity futures is yet to be reached. In our analysis of systematic factors we turn to principal theories in commodity futures, that is the theory of normal backwardation, theory of storage and hedging pressure hypothesis, as well as equity markets inspired systematic risk premiums such market, size and value. We find strong evidence that term structure and hedging pressure are the sources of positive risk premia in commodity futures.

Further, our findings on momentum and factor mimicking portfolios have important practical implications to investors in commodity futures and future research avenues. The epic price run-up in commodity markets over 2003-2014 has triggered a lot institutional investors' appetite for the asset class. With the collapse in oil prices and subsequent bear market, long-only passive investing in commodities lost its lustre among institutional investors. Despite the unattractive risk-adjusted performance of a long-only passive investing, there is evidence in support of active investing in commodity futures. The empirical findings in this article corroborate the case for active investing strategies such as momentum in commodity futures.

The rest of this article is organized as follows, section 2 provides the theoretical framework on idiosyncratic momentum and

systematic factors in commodity futures, section 3 and 4 lay out the methodology and data description, sector 5 provides empirical findings and section 6 concludes.

2. Theoretical Framework

2.1. Idiosyncratic return momentum in equity markets

This article is motivated by the recent findings on idiosyncratic momentum phenomenon in equity markets by Chaves (2016) and Blitz et al. (2011). The authors advance the seminal work of Grundy and Martin (2001) that demonstrates that momentum has dynamic exposures to Fama and French factors (1993). Grundy and Martin (2001) propose a hypothetical momentum strategy that dynamically hedges systematic factors' exposure. Despite significant improvement in performance that this hypothetical strategy yields ex-post, the dynamic factor hedging in momentum strategy is difficult to implement ex-ante. Gutierrez and Prinsky (2007) advance this strand of momentum research by distinguishing between traditional cross-sectional total returns momentum, as originally proposed by Jegadeesh and Titman (1993), and firm specific momentum. Gutierrez and Prinsky (2007) document that both types of momentum portfolios perform similarly in the first year upon portfolio formation; however, there is a striking difference beyond one year. Specifically, profits to the standard relative momentum portfolios in equity markets reverse in 2-5 years after formation which suggests overreaction to relative returns. In contrast, the abnormal firm-specific returns that follow corporate events such as earnings surprises, dividend changes, share repurchase, stock splits continues for years without reversing. The authors attribute the difference in performance between the two types of momentum to the reversal in systematic factors returns.

Blitz et al. (2011) document idiosyncratic returns momentum anomaly in the US Equity market. The authors propose an implementable idiosyncratic return momentum strategy that yields substantially improved performance relative to conventional total returns momentum. Specifically, their idiosyncratic returns momentum strategy ranks stocks cross-sectionally on the basis of residual returns which are obtained by neutralizing Fama and French (1993) market, size and value factors. Since idiosyncratic returns momentum se-

lects securities based on the performance of an idiosyncratic component in the formation period, the strategy by construction is not impacted by systematic factors' performance reversals. The authors document that the idiosyncratic momentum strategy earns risk-adjusted returns that are about twice as large as those of a conventional momentum. Blitz, Huij, and Martens (2011) argue that apart from substantially higher risk-adjusted returns, the idiosyncratic equity returns momentum strategy improves performance in several other ways. The returns of the idiosyncratic momentum appear to be more consistent over time and less concentrated in the extremes of cross-section of stocks such as small cap, high beta or illiquid stocks.

Chaves (2016) corroborates this finding and documents an evidence in support of idiosyncratic momentum in 21 international equity markets in addition to the U.S equity. Similar to Blitz et al. (2011), the strategy he proposes selects stocks based on the idiosyncratic return ranking relative to the cross-section. Methodologically the strategies of Blitz et al. (2011) and Chaves (2016) differ in that the latter extracts residual return from a regression of total returns on market portfolio whilst Blitz et al. (2011) also include size and value factors. Chaves (2016) argues that the vast majority of improvements in idiosyncratic momentum strategy of Blitz et al. (2011) can be attributed to the market portfolio. In essence, the improvements that the idiosyncratic strategy achieves by neutralizing size and value factors are limited. The author reports that the idiosyncratic momentum strategy delivers superior investment outcomes in all international equity markets. Notably, the profitability of the idiosyncratic returns momentum persists far beyond the 12 months holding period.

2.2 Systematic factors in commodity futures

The rationale behind idiosyncratic returns momentum is predicated on the decomposition of a security's total returns into returns attributed to a security's exposure to systematic factors and an idiosyncratic component. The literature on systematic risk factors in traditional asset classes such as equity market is well established. The empirical evidence is virtually universal on the existence of at least three systematic factors in equity markets, that is market, size, and value (Fama and French 1993). Unlike in equity markets, there is no strong

consensus thus far as to what determines the cross-sectional variation in commodity futures returns. Several approaches, which can be broadly categorized into equity inspired, namely those derived from traditional asset pricing models, and commodity-specific have been proposed in the commodity markets literature.

For traditional asset classes, market risk premium, or the market factor, corresponds to the market capitalization-weighted return of a broadly diversified portfolio. For instance, the S&P 500 and JP Morgan US Government Bond Index are conventionally used as market factor proxies of the US equity and US bond markets respectively. In a similar vein, S&P GSCI or an equally-weighted basket of commodities has been used as a proxy of market risk premium in commodity futures. The theoretical and empirical support on S&P GSCI or an equally-weighted portfolio being a systematic risk premium in commodity futures is however mixed. For instance, Basu and Miffre (2013) document that price risk associated with S&P GSCI is zero both statistically and economically. In a different line of research, Blitz et al. (2014) point that the commodity market premium, as proxied by S&P GSCI, has provided Sharpe ratio of merely 0.06 compared to 0.35 for Equity Market Premium and 0.49 for Government Bond Premium.

Value and size factors have become virtually the most popular investment styles in traditional asset classes. Value factor stems from the mean reversion literature of De Bondt and Thaler (1985) and Jegadeesh and Titman (2001). In equity markets the commonly used measure of value factor is the ratio of the book value of equity to market value of equity (Fama and French 1992, Lakonishok et al.1994). For the size premium, the theoretical construct predicts that stocks with low market capitalizations can be expected to earn higher returns than stocks with higher market capitalizations. There are no commonly accepted measures of value nor size in commodity futures thus far. To examine value effect in commodity futures, Asness et al. (2013) propose the log of the spot price 5 years ago divided by the most recent spot price, which effectively is the negative of the spot return over the last 5 years, as a measure of value factor.

Commodity specific factors are intended to capture risk premia specific to the shape of a commodity's term structure and risk transfer dynamics between hedgers and

speculators. Two key factors, hedging pressure and term structure, have been proposed and substantiated in theoretical and empirical literature. The existence of hedging pressure premium stems from the two principal theories in commodities literature, namely the hedging pressure hypothesis and the theory of storage. The hedging pressure hypothesis was first proposed by Keynes (1930) and Hicks (1939) who argue that a commodity futures risk premium is a premium provided to speculators as a reward for accepting the price risk that the hedgers seek to transfer. In essence, this theory predicts that the commodity futures premium is positive only in backwardated markets. On the other hand, the theory of storage (Working 1949, Brennan 1958) suggests that the variation in futures prices is related to storage and inventories rather than hedging pressure. Hirschleifer (1990) solves this divergence by proposing the generalized-equilibrium hedging pressure hypothesis which reconciles the theory of Keynes (1930) and Working (1949). In effect, the theory of Hirschleifer postulates that risk premiums are present in both backwardated and contangoed markets. The theory states that the net long (short) speculators demand a risk premium for taking on the risk of price decline (increase) that the net short (long) hedgers aim to mitigate. Basu and Miffre (2013) provide a strong empirical support of hedging pressure being a systematic factor in determining the commodity futures returns. They also document that hedging pressure risk premium explains the performance of active commodity strategies substantially better as compared to S&P GSCI or an equally-weighted basket of commodities.

The term structure factor stems from the theory of storage. Fama and French (1987), Erb and Harvey (2006) or Gorton and Rouwenhorst (2006) empirically validate that term structure of commodity futures has been historically awarded with above average returns. Term structure underpins the relation between futures prices and the maturity of futures contracts. The theory of storage connects the shape of the term structure to the levels of inventory, costs and benefits of holding a physical commodity. In effect, term structure factor captures the risk premium earned when buying commodities in scarce supply and shorting commodities in abundant supply. More specifically, an excess return of a commodity future consists of a spot return, which is a change in spot price, and roll re-

turn which is a return an investor gets by periodically selling an expiring contract and buying the next to expiry contract. It is thus evident that the shape of a term structure drives the roll return. If term structure of a commodity is upward-sloping, namely a contangoed market, this implies negative roll return. In contract, a downward sloping term structure, which is a backwardated market, implies a positive roll return. Term structure (or Roll return) factor has been extensively substantiated in the empirical literature. Erb and Harvey (2006) note that roll returns explain 91% of the long run cross-sectional variation of commodity futures returns.

3. Data

To carry out the analysis in this chapter we collect data for monthly futures prices for 28 commodities from Bloomberg. The cross section of commodity futures includes several sectors covering agriculture (corn, soybean, sugar, wheat, soybean oil, soybean meal, live cattle, wheat hard winter, lean hogs, coffee, cotton, cocoa, wheat red sping and feeder cattle); energy (WTI, Brent, natural gas, gasoline, heating oil and gasoil), and metals (aluminium, copper, zinc, nickel, lead, gold, silver, platinum). All contracts are traded in the US dollars on the major futures exchanges, namely CME, LME, ICE which are the largest and most liquid markets for derivatives trading. We filter out futures contracts with average trading volume below 1000 contracts. Such choice of contracts and exchanges where these contracts are traded minimizes issues related to practical implementation, particularly liquidity and transaction costs. The data sample is from August 1997 to July 2017. We follow methods used in existing literature in designing the futures price series by holding the closest to maturity contracts until three trading days prior to expiry, then we roll the series to the returns of the next contract and so forth. This method allows us to obtain data for the three closest to expiry contracts in the term structure for any given commodity on any given day. The majority of commodities trade with monthly expiries, however certain commodities roll more infrequently or irregularly, for this reason we do not roll into a new contract if there is greater open interest in a contract with a longer expiry. This methodology provides us with two separate datasets. One contains daily returns, which are used for measuring

momentum, portfolio returns and any calculations relating to a historical price. The second dataset takes the price, which does not adjust for rolling, but merely appends the series with the price of the new contract. This data is used for term structure calculations, which the former data cannot provide due to the adjustments.

In order to construct factor mimicking portfolios in addition to the price series of commodity futures we use the data on open interest for each contract, S&P GSCI index and the data on position of hedgers and speculators. The data on the positions of hedgers and speculators is obtained from the CFTC Commitment of Traders report and is available from 2006. We do not consider the position of non-reportable traders as this category cannot be identified as hedgers or speculators. The positions of hedgers and speculators are reported every Friday at a weekly frequency. Hedging pressure (HP) for a category (speculators or hedgers) is defined as the number of long contracts in that category divided by the total number of contracts in the category. For example, a hedging pressure of 0.3 for hedgers means that over the previous week 30% of hedgers were long, a clear sign of a backwardated market. Vice versa, a hedging pressure of 0.3 for speculators means that over the previous week 30% of speculators were long, which implies contangoed market.

4. Methodology

The analysis of a conventional total return momentum follows the common approach in the literature. In essence, momentum strategy involves a set of rules for security selection, asset allocation and investment holding. Security selection process for a momentum strategy consists in specifying ranking periods and cut-off rules, for a security to be considered a winner or a loser. A conventional momentum strategy selects a security based on a security's cumulative raw return over a ranking period. The length of a ranking period for a momentum strategy should be long enough to identify an establishment of a true trend in the market but not too long so that the entry into a position occurs at the end of a security's trend. Academic literature on cross-sectional total returns momentum in equity markets typically applies 2 to 12 months formation period:

$$Mom_{i,t}=\prod_{j=2}^{12}(1+r_{i,t-j})\ -1 \qquad (1)$$

where r_{it} is the return on a security i in month t. Importantly, the studies in equity markets momentum skip the last month before portfolio formation due to the short-term reversal and bid-ask bounce effects. Since commodity futures do not suffer this problem, skipping the first month may lead inferior results. We analyse ranking and holding periods of 1 to 24 months.

As to cut-off rules, total returns momentum strategy ranks stocks on the basis of their relative performance over a ranking period. The winners are identified as those securities that rank in the top X% of the distribution and as losers those securities that rank in the bottom X% of the distribution. Momentum literature conventionally applies a decile or quintile rules. Since the commodity futures market has a substantially smaller number of securities as compared to equity market, a quartile rule may be more suitable for a momentum strategy in commodity futures. That is, 7 futures which rank highest (lowest) are selected for winner (loser) portfolios. Increasing the number of futures in the winner and loser portfolio leads to increased diversification, however, comes at a cost of a reduced dispersion of returns between winner and loser portfolios and thus reduces the profitability.

The next pillar of a momentum strategy is the portfolio construction process which consists of decisions regarding asset allocation and rebalancing. Consistent with most of the literature, we assign equal weights to the constituents in long and short momentum portfolios. We adopt overlapping portfolios approach of Jegadeesh and Titman (1993; 2001). With this approach, the strategies hold a series of portfolios, in any given month, that are selected in the current month as well as in the previous K-1 months, where K is the holding period.

To design commodity futures idiosyncratic momentum strategy we draw upon the principal papers in equity markets. Idiosyncratic momentum strategy in equity markets constructs long-short momentum portfolios on the basis of residual returns momentum over a ranking period. Gutierrez and Prinsky (2007), Blitz et al. (2011) and Chaves (2016) define idiosyncratic returns on the basis of regression inspired by the CAPM model of Sharpe (1964) and Lintner (1965):

$$r_{i,t}\text{-}r_t^f = \alpha + \beta(R_t^M\text{-}r_t^f) + \varepsilon_{i,t} \quad (2)$$

Where r_{it} is the return on security i in month t, r_{Mt} is the return on the market portfolio in month t, α and β are parameters to be estimated. Based on the estimated parameters, a residual return, $\hat{\varepsilon}_{it}$, is calculated in month t using the following specification:

$$\hat{\varepsilon}_{it} = r_{it} - \hat{a}_i - \hat{\beta}_i * r_{Mt} \quad (3)$$

Following the literature we do not include the estimated alpha (intercept) in the calculation of the residual return because alpha serves as a general control for the misspecification in the model.

The idiosyncratic momentum winners and losers are identified by cumulating monthly residual returns of each security over the ranking period. Since we are deploying several systematic factors, an idiosyncratic return for commodity futures contract is estimated each month on the basis of the following model:

$$r_{i,t} = a_i + \beta_i X_{jt} + e_{i,t} \quad (4)$$

where $r_{i,t}$ is the return on a commodity future i in month t, X_{jt} is a return on the factor mimicking portfolio j at time t. Parameters α are β are estimated by the OLS regression and $e_{i,t}$ is the residual return on a contract i in month t. In essence, the only difference between in the implementation of an idiosyncratic momentum strategy and a total return momentum is that the former selects winners and losers on the basis of residual return as opposed to total return.

To construct factor premiums in commodity futures we apply Fama & French (1993) approach to constructing factor mimicking portfolios, specifically High minus Low (or Low-High). We design factor mimicking portfolios using hedging pressure, roll-yield, size, value measures. Hedging pressure (HP) is defined as long open interest divided by total open interest in a category (hedgers or speculators). Hedgers and Speculators are two separate categories therefore a factor can be obtained by constructing a 'Low minus High' portfolio in either (or both categories). As a first step, the cross-section of commodity futures is sorted based on the average (HP) of either category over a ranking period. In this analysis we implement speculator's category hedging pressure. To construct a speculator –category HP factor portfolio, one goes long 15% of the cross-section with the highest average HP and short 15% of futures with the lowest average HP. To

construct a term structure factor (High roll yield – low roll yield) we rank the cross section of commodity futures on their roll yield over a previous month. Roll yield is defined as F1/F2 (next to delivery contract divided by 2nd next to delivery). We go long 15% of the cross section with the highest average roll yield (corresponds to backwardated market) and short 15% of the cross-section with the lowest roll yield (corresponds to contangoed market). We adopt the approach of Asness et al. (2013) to construct a value premium. We define value factor in the following way. We take a log of spot price 5 years ago (the average spot price from 4.5 to 5.5 years ago) divided by the most recent spot price, which effectively is the negative of the spot return over the last 5 years. To construct a size factor we follow the equity markets approach. We approximate the size of a futures contract for a commodity by multiplying its open interest by its contract value[107]. The contract value and open interest therefore provide a proxy for market capitalisation, which when ranked cross-sectionally, determines the selection of a size factor portfolio. Open interest is used rather than volume as it gives an indication of the size of the market as opposed to its turnover.

5. Empirical results

5.1 Performance of total returns momentum

We start our empirical analysis by examining total returns momentum. Table 1 reports the performance of 144 momentum strategies over different ranking and holding periods ranging from 1 to 12 months. All 144 strategies yield positive returns that vary between 2% to 13% across different combinations. Yet, on exception of four combinations, that is 11 / 1 (stands for 11 months ranking period and 1 month holding period), 1/11, 2/11, 2/10, none of the momentum strategies' returns are significantly different from zero. A strategy that applies 11 months ranking period and 1 month holding period yields a statistically significant 13% annualized return. The other three strategies produce positive statistically significant return, albeit much lower in magnitude, of 5 % per annum in an average.

[107] The contract value is the price multiplied by the specific multiplier.

Table 1 Long-short total return momentum returns

	1	2	3	4	5	6	7	8	9	10	11	12
1	0.047	0.042	0.038	0.037	0.034	0.029	0.021	0.015	0.008	0.023	**0.042**	0.03
	'(0.80)'	'(0.92)'	'(1.04)'	'(1.24)'	'(1.25)'	'(1.22)'	'(0.91)'	'(0.69)'	'(0.38)'	'(1.22)'	**'(2.34)**'**	'(1.79)'
2	0.099	0.098	0.069	0.044	0.066	0.047	0.03	0.023	0.021	**0.05**	**0.052**	0.039
	'(1.55)'	'(1.80)'	'(1.59)'	'(1.16)'	'(1.87)'	'(1.45)'	'(1.03)'	'(0.85)'	'(0.80)'	**'(2.03)*'**	**'(2.35)**'**	'(1.76)'
3	0.107	0.09	0.069	0.054	0.058	0.036	0.018	0.019	0.038	0.052	0.046	0.037
	'(1.82)'	'(1.69)'	'(1.45)'	'(1.24)'	'(1.44)'	'(0.96)'	'(0.52)'	'(0.59)'	'(1.22)'	'(1.82)'	'(1.67)'	'(1.40)'
4	0.102	0.07	0.057	0.04	0.034	0.013	0.013	0.023	0.031	0.037	0.04	0.02
	'(1.75)'	'(1.27)'	'(1.16)'	'(0.87)'	'(0.79)'	'(0.33)'	'(0.37)'	'(0.68)'	'(0.95)'	'(1.22)'	'(1.37)'	'(0.73)'
5	0.095	0.067	0.047	0.027	0.014	0.013	0.03	0.037	0.031	0.042	0.035	0.021
	'(1.58)'	'(1.21)'	'(0.93)'	'(0.57)'	'(0.31)'	'(0.32)'	'(0.76)'	'(1.00)'	'(0.89)'	'(1.26)'	'(1.08)'	'(0.66)'
6	0.095	0.056	0.03	0.008	0.013	0.026	0.037	0.036	0.042	0.042	0.036	0.03
	'(1.63)'	'(1.03)'	'(0.60)'	'(0.17)'	'(0.29)'	'(0.62)'	'(0.93)'	'(0.95)'	'(1.17)'	'(1.22)'	'(1.09)'	'(0.90)'
7	0.049	0.012	-0.007	-0.005	0.022	0.031	0.034	0.033	0.032	0.035	0.032	0.018
	'(0.85)'	'(0.22)'	'(-0.14)'	'(-0.11)'	'(0.49)'	'(0.72)'	'(0.82)'	'(0.84)'	'(0.86)'	'(0.98)'	'(0.91)'	'(0.53)'
8	0.048	0.024	0.016	0.029	0.04	0.043	0.049	0.041	0.043	0.048	0.05	0.031
	'(0.87)'	'(0.46)'	'(0.31)'	'(0.61)'	'(0.87)'	'(0.99)'	'(1.15)'	'(1.02)'	'(1.11)'	'(1.29)'	'(1.39)'	'(0.86)'
9	0.038	0.04	0.06	0.054	0.048	0.046	0.043	0.046	0.046	0.05	0.049	0.039
	'(0.69)'	'(0.77)'	'(1.20)'	'(1.11)'	'(1.04)'	'(1.04)'	'(1.01)'	'(1.10)'	'(1.14)'	'(1.29)'	'(1.32)'	'(1.05)'
10	0.064	0.079	0.07	0.059	0.046	0.038	0.034	0.036	0.041	0.047	0.044	0.047
	'(1.10)'	'(1.44)'	'(1.34)'	'(1.20)'	'(0.96)'	'(0.84)'	'(0.79)'	'(0.86)'	'(1.00)'	'(1.19)'	'(1.18)'	'(1.20)'
11	**0.132**	0.097	0.07	0.058	0.042	0.033	0.029	0.027	0.03	0.036	0.041	0.04
	'(2.37)'**	'(1.81)'	'(1.37)'	'(1.18)'	'(0.89)'	'(0.72)'	'(0.66)'	'(0.63)'	'(0.74)'	'(0.89)'	'(1.05)'	'(1.00)'
12	0.095	0.06	0.049	0.028	0.027	0.02	0.021	0.022	0.027	0.031	0.039	0.039
	'(1.67)'	'(1.11)'	'(0.97)'	'(0.59)'	'(0.57)'	'(0.43)'	'(0.49)'	'(0.52)'	'(0.65)'	'(0.75)'	'(0.99)'	'(0.98)'

The table reports annualized average returns of long-short total return momentum strategies. The holding period is indicated in the rows; the ranking period is indicated in the columns. T statistics in parentheses. ***, **, * indicates statistical significance at 1%, 5%, 10% levels.

Next we turn to the analysis of long (winners) and short (losers) sides of momentum strategy. Understanding the dynamics of winner and loser portfolios is important not only from the theoretical perspective but even more so in a practical context. The empirical evidence from the equity markets momentum research suggests that momentum profits are dominated by short momentum portfolios. In a different line of research, short leg of momentum has been ascribed to momentum crashes (Daniel 2016). Further, despite compelling returns of a winner minus loser equity momentum strategy documented in the literature, a practical implementation of short portfolios has several caveats. Firstly, many investors are restricted to long-only expo-

sures. Secondly, empirical backtests of long-short equity strategies have to be taken with a pinch of salt. That is, there are number of short selling restrictions across equity markets exchanges and time periods. For example, in order to be representative, a long-short momentum backtest in equity markets that captures the period over the Global Financial Crisis (GFC) would require to exclude a large number of financial stocks which were not available for short-selling during the GFC. Aside from a prominent example of short-selling restrictions during the GFC, there are regular restrictions imposed on individual stocks that take place across countries and exchanges. In practice many empirical papers omit such important exclusions.

We find a stark difference in economic and statistical significance between long and short portfolios. Table 2 reports returns to long only total return momentum strategies. Notably, out of 36 strategies, a combination of strategies across 1 to 6 months ranking and holding periods, 29 long-only strategies deliver statistically significant positive annualized return of 11.2%. Extending the ranking and holding horizons to 12 months, 51 out of 144 long-only momentum portfolios are statistically significant and economically profitable. On average, the annualized return of statistically significant long-only momentum portfolio is 10%. In contrast, none of the short portfolios' returns, reported in Table 3, are statistically different from zero. Moreover, the sign of the returns across portfolios that short losers is consistently negative indicating that shorting losers in commodity futures is a strategy that consistently delivers negative returns. In fact, if the returns were statistically significant, this finding would have been indicative of a reversal effect in loser portfolios. We also examine returns of long-short, long-only and short-only portfolios over longer ranking and holding periods, up to 24 months. For brevity we report the main results for 1 to 12 months ranking and holding periods however the results over longer horizons are available from the authors on request. Notably, we also find a strong evidence of statistically significant positive returns in long-only portfolios also over longer ranking periods. We do not find any evidence of momentum effect in long-short nor short-only portfolios over longer ranking and holding periods.

This novel finding exposes that momentum effect in commodity futures is exclusively driven by long-only portfolios whilst short-

only portfolios detract value in the long-short momentum strategy. This finding also has an important practical implication for investors with respect to costs. That is, implementing long-only momentum requires trading only one portfolio instead of two portfolios which implies lower trading costs.

Table 2 Long-only total return momentum returns

	1	2	3	4	5	6	7	8	9	10	11	12
1	0.095	**0.097**	**0.099**	**0.093**	**0.095**	**0.09**	0.084	0.082	0.076	0.076	**0.092**	0.078
	'(1.77)'	**'(1.98)*'**	**'(2.11)*'**	**'(2.08)*'**	**'(2.17)*'**	**'(2.08)*'**	'(1.94)'	'(1.93)'	'(1.82)'	'(1.85)'	**'(2.21)*'**	'(1.89)'
2	**0.119**	**0.136**	**0.115**	**0.106**	**0.116**	**0.101**	**0.089**	0.082	0.079	**0.089**	**0.093**	**0.085**
	'(2.14)*'	**'(2.55)**'**	**'(2.31)**'**	**'(2.28)**'**	**'(2.51)**'**	**'(2.24)*'**	**'(2.02)*'**	'(1.90)'	'(1.85)'	**'(2.09)*'**	**'(2.21)*'**	**'(2.01)*'**
3	**0.151**	**0.128**	**0.123**	**0.115**	**0.119**	**0.1**	**0.092**	0.087	**0.097**	**0.1**	**0.099**	**0.089**
	'(2.68)*'**	**'(2.43)**'**	**'(2.43)**'**	**'(2.34)**'**	**'(2.46)**'**	**'(2.13)*'**	**'(2.03)*'**	'(1.93)'	**'(2.20)*'**	**'(2.26)**'**	**'(2.23)*'**	**'(2.06)*'**
4	**0.122**	**0.113**	**0.11**	**0.106**	**0.099**	0.085	0.082	0.083	0.086	**0.088**	**0.092**	0.077
	'(2.25)*'	**'(2.14)*'**	**'(2.18)*'**	**'(2.16)*'**	**'(2.06)*'**	'(1.82)'	'(1.81)'	'(1.84)'	'(1.95)'	**'(2.00)*'**	**'(2.08)*'**	'(1.77)'
5	**0.145**	**0.13**	**0.11**	**0.104**	0.092	0.086	**0.092**	**0.092**	**0.091**	**0.094**	**0.093**	0.081
	'(2.57)'**	**'(2.42)**'**	**'(2.13)*'**	**'(2.10)*'**	'(1.90)'	'(1.83)'	**'(1.97)*'**	**'(2.03)*'**	**'(2.04)*'**	**'(2.11)*'**	**'(2.08)*'**	'(1.83)'
6	**0.139**	**0.113**	**0.097**	0.085	0.088	**0.094**	**0.097**	0.088	**0.095**	**0.092**	**0.092**	0.084
	'(2.50)'**	**'(2.12)*'**	'(1.88)'	'(1.73)'	'(1.83)'	**'(1.97)*'**	**'(2.05)*'**	'(1.90)'	**'(2.09)*'**	**'(2.03)*'**	**'(2.04)*'**	'(1.85)'
7	0.091	0.082	0.072	0.069	0.084	0.085	0.084	0.08	0.083	0.082	0.081	0.072
	'(1.63)'	'(1.53)'	'(1.41)'	'(1.40)'	'(1.71)'	'(1.77)'	'(1.76)'	'(1.70)'	'(1.79)'	'(1.78)'	'(1.78)'	'(1.58)'
8	0.089	0.077	0.071	0.084	0.088	0.089	0.09	0.086	0.088	0.087	0.09	0.082
	'(1.65)'	'(1.49)'	'(1.44)'	'(1.72)'	'(1.83)'	'(1.85)'	'(1.89)'	'(1.83)'	'(1.88)'	'(1.88)'	'(1.94)'	'(1.77)'
9	0.07	0.077	0.092	0.091	0.088	0.09	0.086	0.088	0.086	0.086	0.085	0.08
	'(1.35)'	'(1.55)'	'(1.86)'	'(1.88)'	'(1.82)'	'(1.89)'	'(1.80)'	'(1.84)'	'(1.83)'	'(1.84)'	'(1.85)'	'(1.72)'
10	0.098	**0.109**	**0.104**	0.094	0.09	0.086	0.079	0.081	0.082	0.083	0.079	0.084
	'(1.81)'	**'(2.08)*'**	**'(2.05)*'**	'(1.90)'	'(1.83)'	'(1.77)'	'(1.64)'	'(1.69)'	'(1.75)'	'(1.77)'	'(1.72)'	'(1.77)'
11	**0.147**	**0.131**	**0.111**	**0.102**	0.093	0.085	0.08	0.078	0.077	0.078	0.076	0.077
	'(2.74)*'**	**'(2.49)**'**	**'(2.17)*'**	**'(2.05)*'**	'(1.89)'	'(1.75)'	'(1.66)'	'(1.62)'	'(1.63)'	'(1.66)'	'(1.64)'	'(1.63)'
12	**0.127**	**0.108**	**0.102**	0.089	0.088	0.083	0.08	0.076	0.077	0.078	0.076	0.078
	'(2.33)'**	**'(2.04)*'**	**'(1.98)*'**	'(1.77)'	'(1.78)'	'(1.68)'	'(1.64)'	'(1.56)'	'(1.62)'	'(1.63)'	'(1.61)'	'(1.63)'

The table reports annualized average returns of long-only total return momentum strategies. The holding period is indicated in the rows; the ranking period is indicated in the columns. T statistics in parentheses. ***, **, * indicates statistical significance at 1%, 5%, 10% levels.

Table 3 Short-only total return momentum returns

	1	2	3	4	5	6	7	8	9	10	11	12
1	-0.044	-0.051	-0.057	-0.051	-0.057	-0.057	-0.059	-0.063	-0.064	-0.05	-0.046	-0.044
	'(-1.00)'	'(-1.29)'	'(-1.53)'	'(-1.34)'	'(-1.54)'	'(-1.53)'	'(-1.65)'	'(-1.78)'	'(-1.77)'	'(-1.41)'	'(-1.31)'	'(-1.25)'
2	-0.018	-0.034	-0.041	-0.056	-0.045	-0.05	-0.054	-0.054	-0.054	-0.036	-0.038	-0.043
	'(-0.41)'	'(-0.83)'	'(-1.02)'	'(-1.43)'	'(-1.17)'	'(-1.30)'	'(-1.48)'	'(-1.46)'	'(-1.43)'	'(-0.98)'	'(-1.04)'	'(-1.19)'
3	-0.038	-0.034	-0.048	-0.055	-0.054	-0.059	-0.069	-0.062	-0.055	-0.044	-0.048	-0.049
	'(-0.90)'	'(-0.81)'	'(-1.18)'	'(-1.33)'	'(-1.38)'	'(-1.51)'	'(-1.85)'	'(-1.65)'	'(-1.46)'	'(-1.22)'	'(-1.36)'	'(-1.36)'
4	-0.018	-0.039	-0.048	-0.06	-0.06	-0.067	-0.064	-0.055	-0.051	-0.047	-0.047	-0.053
	'(-0.39)'	'(-0.88)'	'(-1.11)'	'(-1.43)'	'(-1.45)'	'(-1.66)'	'(-1.63)'	'(-1.42)'	'(-1.32)'	'(-1.27)'	'(-1.29)'	'(-1.41)'
5	-0.044	-0.057	-0.058	-0.071	-0.072	-0.067	-0.057	-0.051	-0.055	-0.048	-0.054	-0.056
	'(-0.96)'	'(-1.27)'	'(-1.33)'	'(-1.66)'	'(-1.74)'	'(-1.65)'	'(-1.45)'	'(-1.33)'	'(-1.45)'	'(-1.29)'	'(-1.46)'	'(-1.48)'
6	-0.039	-0.052	-0.062	-0.072	-0.069	-0.062	-0.055	-0.049	-0.049	-0.046	-0.052	-0.05
	'(-0.86)'	'(-1.19)'	'(-1.45)'	'(-1.74)'	'(-1.68)'	'(-1.55)'	'(-1.40)'	'(-1.27)'	'(-1.30)'	'(-1.25)'	'(-1.41)'	'(-1.34)'
7	-0.039	-0.065	-0.074	-0.07	-0.057	-0.05	-0.047	-0.043	-0.047	-0.043	-0.046	-0.05
	'(-0.82)'	'(-1.46)'	'(-1.70)'	'(-1.62)'	'(-1.36)'	'(-1.24)'	'(-1.17)'	'(-1.10)'	'(-1.21)'	'(-1.13)'	'(-1.23)'	'(-1.31)'
8	-0.038	-0.049	-0.052	-0.051	-0.045	-0.042	-0.038	-0.042	-0.042	-0.036	-0.037	-0.048
	'(-0.84)'	'(-1.12)'	'(-1.19)'	'(-1.19)'	'(-1.07)'	'(-1.04)'	'(-0.96)'	'(-1.08)'	'(-1.09)'	'(-0.95)'	'(-0.99)'	'(-1.26)'
9	-0.03	-0.034	-0.029	-0.035	-0.036	-0.041	-0.04	-0.039	-0.037	-0.033	-0.034	-0.038
	'(-0.67)'	'(-0.77)'	'(-0.66)'	'(-0.81)'	'(-0.87)'	'(-1.01)'	'(-0.99)'	'(-0.97)'	'(-0.96)'	'(-0.86)'	'(-0.89)'	'(-1.02)'
10	-0.031	-0.028	-0.031	-0.032	-0.041	-0.044	-0.042	-0.041	-0.038	-0.033	-0.032	-0.035
	'(-0.66)'	'(-0.62)'	'(-0.71)'	'(-0.76)'	'(-0.98)'	'(-1.08)'	'(-1.02)'	'(-1.03)'	'(-0.97)'	'(-0.86)'	'(-0.84)'	'(-0.91)'
11	-0.013	-0.03	-0.037	-0.041	-0.047	-0.048	-0.047	-0.047	-0.043	-0.039	-0.033	-0.035
	'(-0.28)'	'(-0.68)'	'(-0.86)'	'(-0.98)'	'(-1.14)'	'(-1.18)'	'(-1.17)'	'(-1.19)'	'(-1.10)'	'(-1.01)'	'(-0.85)'	'(-0.90)'
12	-0.028	-0.044	-0.048	-0.056	-0.057	-0.059	-0.055	-0.05	-0.047	-0.044	-0.035	-0.036
	'(-0.63)'	'(-1.01)'	'(-1.14)'	'(-1.36)'	'(-1.39)'	'(-1.44)'	'(-1.37)'	'(-1.26)'	'(-1.20)'	'(-1.16)'	'(-0.92)'	'(-0.95)'

The table reports annualized average returns of short-only total return momentum strategies. The holding period is indicated in the rows; the ranking period is indicated in the columns. T statistics in parentheses. ***, **, * indicates statistical significance at 1%, 5%, 10% levels.

5.2 Factor- mimicking portfolios

In order to implement idiosyncratic momentum we start with the analysis of systematic factors. Specifically, we construct and examine several factor mimicking portfolios on the basis of hedging pressure, term structure, size, value measures. On exception of market factor which is a long-only portfolio proxied by the S&P GSCI index, all other factors are constructed using Fama and French (1993) approach. Each factor mimicking portfolio systematically goes long (short) 15% of best (worst) performing securities in the cross-section.

Table 4 exhibits annualized returns, volatilities, statistical significance and return to

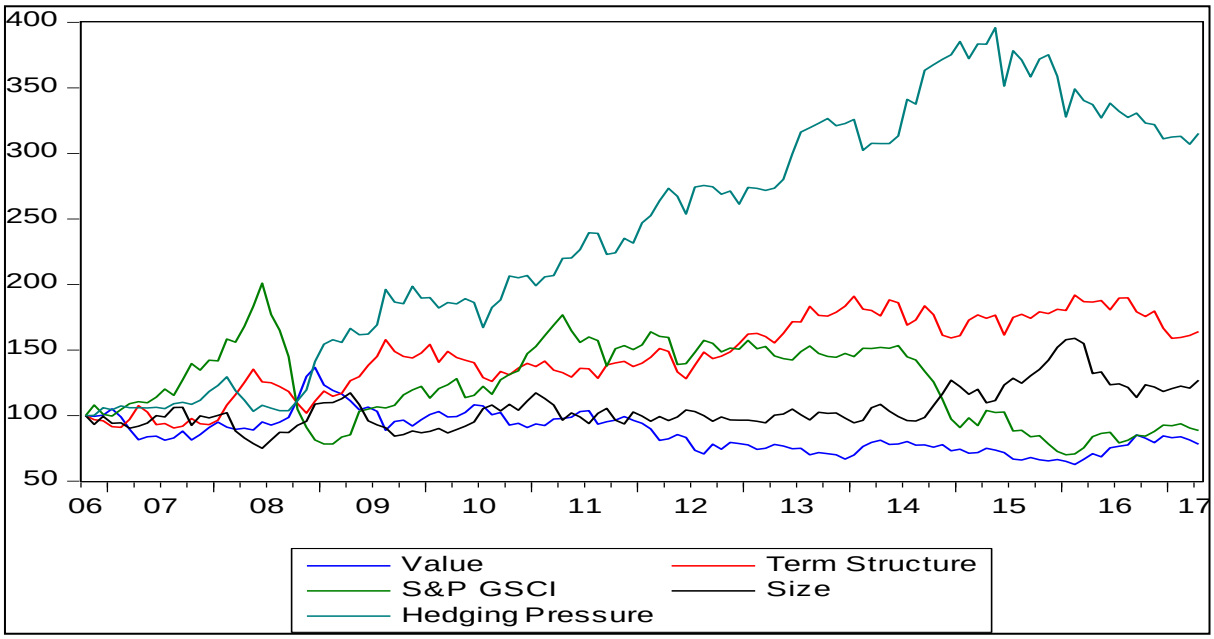
risk ratios of the five factor mimicking portfolios. A market factor yields statistically insignificant and relatively low annualized return. Remarkably, factor portfolios for term structure and hedging pressure are statistically significant and positive delivering annualized returns of 6.27% and 12.56% respectively. Not only these factors deliver positive return over the market portfolio they also do so with a lower volatility relative to S&P GSCI. In particular, there appears to be a sizable positive systematic risk premium in a factor mimicking portfolios constructed on the basis of a hedging pressure signal. Cumulative returns to five factor mimicking portfolios are reported in Figure 1. The hedging pressure factor portfolio also exhibits the lowest volatility among the five factors. This finding corroborates the results documented by Basu and Miffre (2012) who state that hedging pressure is a systematic risk premium in commodity futures. Further, this finding provides direct support to the theory of Hirschleifer (1990). The returns to factor portfolios constructed on the basis of size and value are insignificantly different from zero.

Table 4 Return and volatility of factor mimicking portfolios

	S&P GSCI	HP	Term Structure	Size	Value
Return (annualized)	1.64%	12.56%	6.27%	4.16%	0.07%
T-statistic	0.22	2.43*	2.17*	0.23	-1.38
Volatility (annualized)	23%	16%	17%	19%	18%
Return to risk ratio	0.07	0.79	0.38	0.22	0.00

The table reports mean annualized return and annualized volatility (standard deviation) of factor mimicking portfolios. The sample period is 2006M10-2017M4. Return to risk ratio can be construed as an analogue to Sharpe ratio. HP stands for hedging pressure.

Figure 1 Cumulative returns of factor mimicking portfolios



To determine whether any of the above factor mimicking portfolios can explain returns to momentum we regress returns to a total return momentum strategy on individual factors. Table 5 reports estimated coefficients and T statistics of simple and multiple regressions. Notably, the coefficients for term structure and hedging pressure are statistically significant and sizable across all regressions. Since the data for hedging pressure is available only from 2006 and given that in this paper longer ranking periods are examined for momentum, we exclude HP factor from the idiosyncratic returns momentum strategy in order not to compromise the length of data sample for momentum implementation. A marked difference is observed in the statistical significance of the S&P GSCI index in long-only and long-short momentum's sensitivity to this factor. Given that long-only strategies appear particularly promising in the context of commodity futures momentum, we include this factor in subsequent idiosyncratic momentum analysis. Both size and value fare relatively similarly with respect to their statistical significance, yet value factor by design comes with a shorter sample period i.e. the definition of value is a negative of a return 5 years ago. On that basis, not to compromise the sample length of momentum strategies, value is excluded from subsequent idiosyncratic momentum. We thus proceed with idiosyn-

cratic momentum implementation using three factors: term structure, market and size.

Table 5 Total return momentum's sensitivity to factors

Panel A: Long-only momentum simple regressions' coefficients

	S&P GSCI	Hedging Pressure	Term Structure	Size	Value
Coefficient	0.65	0.39	0.39	-0.34	-0.32
T-statistic	10.49*	4.74*	4.15*	-3.82*	-4.38*

Panel B: long-only momentum multiple regression coefficients

	S&P GSCI	Term Structure	Size	Value
Coefficient	0.74	0.24	0.25	-0.05
T-statistic	8.90*	2.13*	2.52*	-0.88

Panel C: Long-short momentum simple regressions' coefficients

	S&P GSCI	Hedging Pressure	Term Structure	Size	Value
Coefficient	0.10	0.58	0.56	-0.19	-0.35
T-statistic	1.47	5.65*	7.45*	-2.66*	-4.93*

Panel D: Long-short momentum multiple regression coefficients

	S&P GSCI	Term Structure	Size	Value
Coefficient	-0.04	0.28	0.00	-0.27
T-statistic	-0.54	2.90*	0.02	-3.26*

The table reports regression coefficients of simple and multiple OLS regressions. Since the data for hedging pressure is available only from 2006, the HP factor is excluded from multiple regressions. Since value factor requires 5 years look-back window, all multiple regressions and simple regressions for value factor are carried out over the sample period covering 2002 to 2017. * indicates statistical significance at 5% or more.

5.3 Idiosyncratic returns momentum

This subsection presents the analysis of idiosyncratic returns momentum strategy. Table 6 reports returns and T statistics to long-short idiosyncratic momentum strategies. As hypothesized, idiosyncratic long-short momentum performs substantially better than total return long-short momentum. Specifically, the returns across all long-short strategies are positive and 21

strategies yield statistically significant returns. The average annualized return across statistically significant strategies is 12.3%.

Table 6 Long-short idiosyncratic momentum returns

	1	2	3	4	5	6	7	8	9	10	11	12
1	0.061	0.054	0.061	**0.085**	0.059	**0.070**	0.049	**0.050**	0.036	**0.045**	**0.053**	0.040
	'(0.99)'	'(1.11)'	'(1.64)'	**'(2.48)**'**	'(1.84)'	**'(2.40)**'**	'(1.91)'	**'(2.08)*'**	'(1.54)'	**'(2.03)*'**	**'(2.64)***'**	'(1.96)'
2	0.120	**0.136**	**0.132**	**0.091**	**0.078**	0.059	0.048	0.034	0.038	0.046	0.047	0.031
	'(1.85)'	**'(2.40)**'**	**'(2.77)***'**	**'(2.10)*'**	**'(1.98)*'**	'(1.64)'	'(1.50)'	'(1.11)'	'(1.28)'	'(1.67)'	'(1.81)'	'(1.25)'
3	**0.175**	**0.154**	**0.134**	**0.113**	0.069	0.055	0.028	0.031	0.056	0.059	0.039	0.036
	'(2.66)*'**	**'(2.60)**'**	**'(2.44)**'**	**'(2.18)*'**	'(1.52)'	'(1.28)'	'(0.76)'	'(0.86)'	'(1.64)'	'(1.86)'	'(1.35)'	'(1.30)'
4	**0.131**	**0.119**	0.102	0.068	0.043	0.030	0.013	0.029	0.044	0.038	0.036	0.020
	'(2.02)*'	**'(2.03)*'**	'(1.85)'	'(1.31)'	'(0.91)'	'(0.69)'	'(0.33)'	'(0.75)'	'(1.20)'	'(1.17)'	'(1.17)'	'(0.68)'
5	0.131	**0.124**	0.110	0.076	0.035	0.036	0.032	0.043	0.056	0.046	0.035	0.032
	'(1.94)'	**'(2.02)*'**	'(1.93)'	'(1.42)'	'(0.71)'	'(0.77)'	'(0.75)'	'(1.03)'	'(1.45)'	'(1.34)'	'(1.05)'	'(1.01)'
6	**0.146**	0.093	0.069	0.033	0.028	0.031	0.031	0.025	0.032	0.028	0.024	0.016
	'(2.25)*'	'(1.51)'	'(1.23)'	'(0.65)'	'(0.58)'	'(0.67)'	'(0.71)'	'(0.62)'	'(0.83)'	'(0.79)'	'(0.70)'	'(0.52)'
7	0.091	0.072	0.060	0.043	0.049	0.039	0.031	0.035	0.031	0.030	0.024	0.010
	'(1.36)'	'(1.20)'	'(1.09)'	'(0.83)'	'(0.98)'	'(0.82)'	'(0.70)'	'(0.87)'	'(0.79)'	'(0.83)'	'(0.68)'	'(0.30)'
8	0.042	0.032	0.016	0.029	0.029	0.018	0.038	0.025	0.020	0.014	0.021	0.007
	'(0.64)'	'(0.56)'	'(0.29)'	'(0.57)'	'(0.59)'	'(0.38)'	'(0.87)'	'(0.60)'	'(0.50)'	'(0.38)'	'(0.60)'	'(0.20)'
9	0.044	0.040	0.052	0.044	0.044	0.045	0.033	0.032	0.020	0.023	0.025	0.010
	'(0.69)'	'(0.68)'	'(0.94)'	'(0.84)'	'(0.87)'	'(0.98)'	'(0.73)'	'(0.77)'	'(0.51)'	'(0.60)'	'(0.66)'	'(0.29)'
10	0.087	0.109	0.083	0.067	0.058	0.042	0.040	0.029	0.027	0.022	0.026	0.015
	'(1.30)'	'(1.78)'	'(1.45)'	'(1.24)'	'(1.14)'	'(0.89)'	'(0.85)'	'(0.67)'	'(0.63)'	'(0.54)'	'(0.65)'	'(0.40)'
11	**0.174**	**0.157**	**0.119**	0.097	0.077	0.057	0.048	0.036	0.034	0.027	0.031	0.024
	'(2.62)*'**	**'(2.56)**'**	**'(2.05)*'**	'(1.80)'	'(1.50)'	'(1.17)'	'(1.02)'	'(0.80)'	'(0.77)'	'(0.64)'	'(0.77)'	'(0.62)'
12	0.114	0.103	0.087	0.059	0.051	0.035	0.027	0.026	0.014	0.013	0.019	0.016
	'(1.69)'	'(1.74)'	'(1.55)'	'(1.10)'	'(1.00)'	'(0.73)'	'(0.59)'	'(0.57)'	'(0.31)'	'(0.31)'	'(0.47)'	'(0.38)'

The table reports annualized average returns of long-short idiosyncratic momentum strategies. The holding period is indicated in the rows; the ranking period is indicated in the columns. T statistics in parentheses. ***, **, * indicates statistical significance at 1%, 5%, 10% levels.

Next we separately examine long-only and short-only idiosyncratic momentum strategies. For brevity we do not include the tables with these results however they are available from authors on request. Long-only strategy delivers statistically significant and positive annualized returns of 12% on an average. The strategy is significant and positive across virtually all ranking periods for the holding periods of 1 and 2 months.

For 3 and 4 months holding periods 8 and 7 out of 12 implementations respectively are significant and profitable. The profitability of a strategy ceases beyond 7th month holding period. We also examine the profitability of this strategy over longer horizons. Again, the strategy delivers statistically significant and positive average annualized return of 12% across virtually all ranking periods (13 to 24 months) for holding periods of 1 and 2 months. Long-only idiosyncratic momentum is a remarkably robust and profitable strategy across all ranking periods (1 to 24 months) and holding periods of up to 2 months. Similar to total returns momentum, none of the short-only idiosyncratic momentum strategies are statistically significant.

As a robustness test we also perform analysis of idiosyncratic momentum with a tighter cut-off threshold. This strategy (for simplicity referred to as 'concentrated' going forward) goes long (short) the best (worst) 4 contracts. In the long-short implementation the returns across strategies are positive and 26 strategies out of 144 yield statistically significant return. The average annualized return across statistically significant strategies is 8.5%. The long-only implementation of the strategy, Table 7, yields remarkably consistent positive statistically significant returns. Notably, the strategy provides a material improvement over the cut-off period of 7 contracts. Specifically, over the ranking and holding periods of 1 to 12 months the strategy delivers an average annualized returns of 9.7% across 88% of implementations. Furthermore, the profitability of the strategy does not cease after 12 months. The strategy works exceptionally well over longer ranking periods. Specifically, over the ranking periods from 1 to 24 months and holding periods for 1 to 12 months, which results in 288 different combinations, 198 combinations are statistically significant. In effect, 69% of implementations that include longer durations of up to 24 months are profitable and statistically significant. This reveals that long-only idiosyncratic momentum is a very persistent phenomenon. To ensure that both momentum strategies are compared adequately, the analysis of total return momentum with the same cut-off threshold was carried. In contrast to idiosyncratic momentum, a 'concentrated' version of a total return momentum performs substantially worse than a total return momentum with standard cut-off point of 7 securities.

Table 7 Long-only idiosyncratic momentum returns (concentrated)

	1	2	3	4	5	6	7	8	9	10	11	12
1	0.0956	0.1027	0.1131	0.1120	0.0990	0.1003	0.0923	0.0827	0.0802	0.0817	0.0855	0.0805
	'(1.97)*'	'(2.35)**'	'(2.66)***'	'(2.68)***'	'(2.41)**'	'(2.49)**'	'(2.30)**'	'(2.12)*'	'(2.05)*'	'(2.14)*'	'(2.18)*'	'(2.08)*'
2	0.1199	0.1321	0.1270	0.1147	0.1094	0.1017	0.0885	0.0794	0.0825	0.0849	0.0819	0.0771
	'(2.38)**'	'(2.82)***'	'(2.83)***'	'(2.64)***'	'(2.55)**'	'(2.46)**'	'(2.19)*'	'(2.00)*'	'(2.05)*'	'(2.15)*'	'(2.07)*'	'(1.97)*'
3	0.1454	0.1378	0.1323	0.1208	0.1022	0.1027	0.0792	0.0858	0.0978	0.0943	0.0928	0.0896
	'(2.85)***'	'(2.90)***'	'(2.83)***'	'(2.64)***'	'(2.27)**'	'(2.36)**'	'(1.88)'	'(2.05)*'	'(2.34)**'	'(2.29)**'	'(2.26)**'	'(2.23)*'
4	0.1264	0.1253	0.1111	0.1011	0.0917	0.0894	0.0783	0.0872	0.0871	0.0868	0.0886	0.0801
	'(2.50)**'	'(2.52)**'	'(2.35)**'	'(2.19)*'	'(2.05)*'	'(2.05)*'	'(1.87)'	'(2.08)*'	'(2.11)*'	'(2.14)*'	'(2.17)*'	'(2.00)*'
5	0.1170	0.1097	0.1009	0.0903	0.0768	0.0773	0.0800	0.0834	0.0826	0.0845	0.0851	0.0803
	'(2.29)**'	'(2.22)*'	'(2.14)*'	'(1.95)'	'(1.73)'	'(1.80)'	'(1.89)'	'(2.00)*'	'(2.00)*'	'(2.06)*'	'(2.09)*'	'(1.98)*'
6	0.1268	0.1114	0.0973	0.0843	0.0787	0.0828	0.0836	0.0835	0.0864	0.0871	0.0861	0.0804
	'(2.47)**'	'(2.30)**'	'(2.10)*'	'(1.87)'	'(1.80)'	'(1.93)'	'(1.98)*'	'(2.02)*'	'(2.09)*'	'(2.13)*'	'(2.11)*'	'(1.99)*'
7	0.0821	0.0929	0.0792	0.0797	0.0825	0.0843	0.0883	0.0867	0.0859	0.0883	0.0882	0.0802
	'(1.65)'	'(1.96)'	'(1.75)'	'(1.79)'	'(1.87)'	'(1.95)'	'(2.07)*'	'(2.07)*'	'(2.08)*'	'(2.14)*'	'(2.13)*'	'(1.97)'
8	0.1111	0.1005	0.0912	0.0984	0.0957	0.0926	0.0963	0.0917	0.0918	0.0921	0.0915	0.0840
	'(2.29)**'	'(2.20)*'	'(2.05)*'	'(2.22)*'	'(2.18)*'	'(2.16)*'	'(2.26)**'	'(2.19)*'	'(2.21)*'	'(2.23)*'	'(2.20)*'	'(2.07)*'
9	0.0783	0.0945	0.1005	0.0979	0.0917	0.0961	0.0937	0.0908	0.0929	0.0920	0.0892	0.0829
	'(1.66)'	'(2.09)*'	'(2.25)*'	'(2.21)*'	'(2.10)*'	'(2.27)**'	'(2.22)*'	'(2.19)*'	'(2.24)*'	'(2.24)*'	'(2.15)*'	'(2.06)*'
10	0.1109	0.1230	0.1072	0.1048	0.0987	0.0977	0.0946	0.0941	0.0926	0.0926	0.0881	0.0844
	'(2.35)**'	'(2.64)***'	'(2.35)**'	'(2.34)**'	'(2.23)*'	'(2.24)*'	'(2.17)*'	'(2.19)*'	'(2.16)*'	'(2.18)*'	'(2.08)*'	'(2.03)*'
11	0.1532	0.1328	0.1182	0.1168	0.1065	0.1004	0.0993	0.0931	0.0908	0.0890	0.0867	0.0813
	'(3.07)***'	'(2.73)***'	'(2.50)**'	'(2.51)**'	'(2.34)**'	'(2.25)*'	'(2.23)*'	'(2.13)*'	'(2.09)*'	'(2.07)*'	'(2.03)*'	'(1.93)'
12	0.1127	0.1056	0.1104	0.1044	0.1010	0.0975	0.0975	0.0935	0.0918	0.0934	0.0890	0.0863
	'(2.30)**'	'(2.23)*'	'(2.36)**'	'(2.26)**'	'(2.22)*'	'(2.18)*'	'(2.20)*'	'(2.14)*'	'(2.12)*'	'(2.16)*'	'(2.06)*'	'(2.03)*'
13	0.1068	0.1213	0.1098	0.1026	0.1020	0.0948	0.0941	0.0917	0.0901	0.0885	0.0886	0.0835
	'(2.22)*'	'(2.55)**'	'(2.34)**'	'(2.23)*'	'(2.24)*'	'(2.11)*'	'(2.13)*'	'(2.09)*'	'(2.07)*'	'(2.05)*'	'(2.05)*'	'(1.95)'
14	0.1277	0.1160	0.1086	0.1033	0.1002	0.0988	0.0958	0.0940	0.0937	0.0935	0.0923	0.0866
	'(2.52)**'	'(2.36)**'	'(2.26)**'	'(2.18)*'	'(2.16)*'	'(2.16)*'	'(2.12)*'	'(2.10)*'	'(2.12)*'	'(2.12)*'	'(2.10)*'	'(1.99)*'
15	0.1218	0.1160	0.1081	0.1017	0.0973	0.0945	0.0928	0.0941	0.0928	0.0903	0.0886	0.0873
	'(2.45)**'	'(2.38)**'	'(2.27)**'	'(2.17)*'	'(2.12)*'	'(2.10)*'	'(2.07)*'	'(2.11)*'	'(2.11)*'	'(2.05)*'	'(2.02)*'	'(2.00)*'
16	0.1357	0.1169	0.1036	0.0979	0.0946	0.0937	0.0932	0.0929	0.0906	0.0879	0.0877	0.0836
	'(2.69)***'	'(2.39)**'	'(2.20)*'	'(2.12)*'	'(2.08)*'	'(2.08)*'	'(2.09)*'	'(2.08)*'	'(2.05)*'	'(2.00)*'	'(1.99)*'	'(1.91)'
17	0.1344	0.1208	0.1080	0.0978	0.0961	0.0940	0.0927	0.0917	0.0895	0.0844	0.0868	0.0827
	'(2.67)***'	'(2.49)**'	'(2.29)**'	'(2.11)*'	'(2.10)*'	'(2.08)*'	'(2.07)*'	'(2.06)*'	'(2.02)*'	'(1.92)'	'(1.97)'	'(1.87)'
18	0.1185	0.1076	0.0949	0.0902	0.0892	0.0886	0.0879	0.0852	0.0842	0.0814	0.0824	0.0796
	'(2.38)**'	'(2.26)*'	'(2.07)*'	'(1.98)*'	'(1.98)*'	'(1.99)*'	'(1.98)*'	'(1.93)'	'(1.92)'	'(1.86)'	'(1.87)'	'(1.81)'
19	0.1097	0.0931	0.0903	0.0856	0.0841	0.0824	0.0815	0.0782	0.0796	0.0802	0.0800	0.0776
	'(2.24)*'	'(1.98)*'	'(1.96)'	'(1.88)'	'(1.87)'	'(1.84)'	'(1.83)'	'(1.77)'	'(1.80)'	'(1.81)'	'(1.80)'	'(1.75)'
20	0.0864	0.0960	0.0819	0.0767	0.0736	0.0727	0.0730	0.0724	0.0733	0.0748	0.0755	0.0715
	'(1.83)'	'(2.07)*'	'(1.81)'	'(1.72)'	'(1.67)'	'(1.66)'	'(1.66)'	'(1.66)'	'(1.68)'	'(1.70)'	'(1.72)'	'(1.62)'
21	0.0985	0.0935	0.0820	0.0835	0.0804	0.0795	0.0815	0.0802	0.0799	0.0814	0.0812	0.0763
	'(2.06)*'	'(2.04)*'	'(1.82)'	'(1.86)'	'(1.81)'	'(1.79)'	'(1.83)'	'(1.81)'	'(1.81)'	'(1.83)'	'(1.82)'	'(1.71)'

22	0.1001	0.0913	0.0830	0.0806	0.0806	0.0767	0.0763	0.0753	0.0770	0.0788	0.0772	0.0731
	'(2.12)*'	'(2.00)*'	'(1.84)'	'(1.78)'	'(1.79)'	'(1.72)'	'(1.71)'	'(1.70)'	'(1.73)'	'(1.76)'	'(1.73)'	'(1.63)'
23	0.0967	0.0917	0.0859	0.0812	0.0849	0.0792	0.0795	0.0785	0.0801	0.0833	0.0821	0.0774
	'(2.08)*'	'(2.02)*'	'(1.90)'	'(1.79)'	'(1.88)'	'(1.76)'	'(1.78)'	'(1.75)'	'(1.78)'	'(1.85)'	'(1.82)'	'(1.72)'
24	0.1002	0.0873	0.0875	0.0865	0.0829	0.0800	0.0790	0.0776	0.0806	0.0832	0.0827	0.0805
	'(2.15)*'	'(1.89)'	'(1.91)'	'(1.90)'	'(1.82)'	'(1.77)'	'(1.75)'	'(1.71)'	'(1.77)'	'(1.83)'	'(1.82)'	'(1.77)'

The table reports annualized average returns of long-only idiosyncratic momentum strategies. The holding period is indicated in the rows; the ranking period is indicated in the columns. T statistics in parentheses. ***, **, * indicates statistical significance at 1%, 5%, 10% levels. Concentrated implies a cut-off threshold as 4 securities.

The robust performance of idiosyncratic momentum implemented with tighter cut-off threshold substantiates the idiosyncratic returns momentum strategy in commodity futures. The findings suggest that a commodity specific momentum is a much more persistent phenomenon than total returns momentum. To assess whether the returns to idiosyncratic momentum are a compensation for a systematic risk factors we examine regression coefficients of idiosyncratic returns, both long-only and long-short, on returns to factor mimicking portfolios. Table 8 reports the coefficients of OLS regressions of momentum returns on factors. Long-short momentum returns are partially explained by returns to term structure factor. On the other hand, the market and size factors appear statistically significant in explaining long-only idiosyncratic returns. Notably, alphas are statistically significant in both long-only and long-short idiosyncratic momentum strategies.

Table 8 Idiosyncratic momentum's sensitivity to factors

Panel A: Long-short momentum multiple regressions' coefficients

	Alpha	S&P GSCI	Term Structure	Size
Coefficient	0.01	-0.11	0.249	0.04
T-statistic	2.27*	-1.07	2.38*	0.69

Panel B: Long-only momentum multiple regression coefficients

	Alpha	S&P GSCI	Term Structure	Size
Coefficient	0.01	0.65	0.06	0.30
T-statistic	2.15*	7.41*	0.07	3.02*

The table reports regression coefficients of multiple regressions. Alpha denotes intercept in an OLS regression.

5.4 Discussion of results

Table 9 compares the returns and robustness of a total return and idiosyncratic return momentum strategies. Firstly, the findings expose that momentum in commodity futures is almost exclusively driven by long-only portfolios. None of the short-only momentum strategies in either total return or idiosyncratic return implementation is statistically significant. The analysis reveals that idiosyncratic momentum is a substantially more robust and profitable strategy than a total return momentum. Specifically, ranking commodity futures on the basis of idiosyncratic returns improves the performance of momentum both in long-short and long-only implementations. Notably, a conventional long-short momentum is an inferior strategy in that it yields statistically significant returns in only 4 implementations out of 144 with an average annualized return across statistically significant strategies of 7%. In contrast, an idiosyncratic return long-short momentum yields statistically significant returns in 21 out of 144 implementations. Moreover, the average annualized return across statistically significant strategies is 12.3%, which is nearly double from that of a total return momentum. Idiosyncratic returns momentum yields a substantial improvement in long-only implementations. A long-only idiosyncratic momentum implemented with a cut-off of 7 futures contracts, yields an annualized return across statistically significant strategies of 12.3% whereas a long-only total return momentum yields an annualized return across statistically significant strategies of 10%. Further, idiosyncratic momentum returns comes with higher T-statistics on average and delivers statistically significant positive returns over the longer durations. Remarkably, a concentrated implementation provides positive returns of 10% per year in average across 126 implementations out of 144. The concentrated idiosyncratic momentum is statistically significant and positive also over longer ranking and holding periods.

Notably, both type of momentum deliver the highest return in an implementation that applies 11 months as a ranking period and 1 month as a holding period. This combination is consistent with the previous findings in the literature. In particular, this is the only strategy which is successful in the context of a total return long-short momentum with the other three statistically significant strategies producing an annualized return of just 5 percent. The 11/1 implementation

yields 13.2% and 12.7% average annualized return in a total return long- short and long-only momentum respectively. The 11/1 momentum delivers an impressive 17.4% annualized average return in an idiosyncratic long-short implementation and 13% annualized average return in a long-only implementation. The concentrated strategy delivers 14.5% and 15.3 for long-short and long-only momentum respectively. The evidence on 11/1 combination is consistent with the autocorrelation patterns across commodity futures. In particular, 9 out of 28 commodity futures exhibit sizable and statistically significant autocorrelation at the 11th month lag. All coefficients at the 11th month lag are also positive. Therefore, a superior returns of 11/1 momentum strategies are partially explained by the 11th month lag autocorrelation.

Table 10 reports return and volatility characteristics of different implementations of momentum. There is a marked improvement in both return and volatility profile of idiosyncratic momentum in a long-only and long-short implementation. As a result, idiosyncratic return momentum yield substantially higher risk adjusted return. Specifically, a return to risk ratio of an idiosyncratic long-short momentum is 0.65 versus 0.36 for a total return long-short momentum. The difference is less pronounced in the context of long-only implementation, that is an idiosyncratic return long-only momentum yields a return to risk ratio of 0.63 versus 0.55 for a total return long-only. Figure 2 exhibits the cumulative returns to a 100 USD investment in long-only idiosyncratic and total return momentum strategies as well as S&P GSCI. Both total return and idiosyncratic return materially outperform S&P GSCI. Evidently, an investor could have achieved substantially better returns by implementing an active long-only momentum strategy than by passively following a long-only SP GSCI index.

Table 9 Robustness of momentum strategies

		Long-short	Long-only
Total Return			
	Number of Successful Strategies	4	51
	% of statistically significant strategies	3%	35%
	Average Annualized Return	7%	10%
Idiosyncratic Return			
	Number of Successful Strategies	21	48
	% of statistically significant strategies	15%	33%
	Average Annualized Return	12.3%	12.3%
Idiosyncratic Return (concentrated)			
	Number of Successful Strategies	26	126
	% of statistically significant strategies	18%	88%
	Average Annualized Return	8.5%	9.7%

The table reports the summary of different momentum strategies. Average annualized return refers to the average across statistically significant strategies

Table 10 Return and volatility of momentum strategies

	Total Ret. Long-short	Total Ret. Long-only	Idiosyncratic long-short	Idiosyncratic long-only
Return (annualized)	7%	11%	13%	13%
Volatility (annualized)	21%	21%	19%	20%
Return to Risk ratio	0.36	0.55	0.65	0.63

This table reports risk and return characteristics of 4 momentum implementations over the common period of July 2002-April 2017. Return to risk ratio can be construed as an analogue to Sharpe ratio.

Figure 2 Cumulative returns of long-only momentum and S&P GSCI

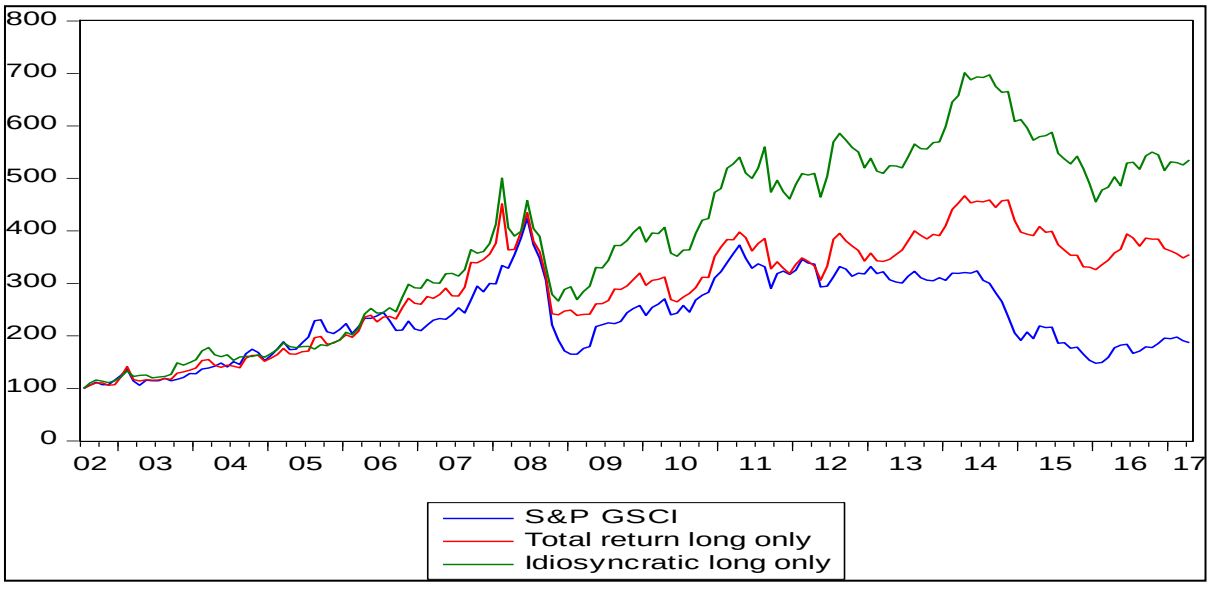


Table 11 reports correlation of momentum strategies and S&P GSCI. Long-only momentum strategies are positively and highly correlated with the S&P GSCI. Yet, a long-only idiosyncratic returns momentum exhibits a lower correlation compared to a total return momentum. Specifically, idiosyncratic long-only momentum's correlation with S&P GSCI is 0.57 whereas total return momentum's correlation with the passive index is 0.70. As to long short strategies, both type of momentum are uncorrelated to S&P GSCI. Specifically, total return long-short momentum exhibits a correlation of only 0.1 to S&P GSCI whilst the correlation between idiosyncratic long-short momentum and S&P GSCI is -0.1. Hence, the long-short momentum strategies provide a diversification with respect to S&P GSCI.

Table 11 Momentum strategies' correlations

	Total return long-only	Idiosyncratic long-only	S&P GSCI
Total return long-only	1.00	0.85	0.70
Idiosyncratic long-only	0.85	1.00	0.57
S&P GSCI	0.70	0.57	1.00
	Total return long-short	**Idiosyncratic long-short**	**S&P GSCI**
Total return long-short	1.00	0.66	0.10
Idiosyncratic long-short	0.66	1.00	-0.10
S&P GSCI	0.10	-0.10	1.00

The table reports correlations coefficients of momentum strategies and S&P GSCI. The period is 2002 to 2017

6. Concluding remarks

In this article we examine idiosyncratic return momentum in commodity futures. By doing so, we also revisit total returns momentum strategy and examine factor mimicking portfolios in commodity futures. Our analysis reveals that idiosyncratic momentum is a robust and profitable strategy. The findings in this paper show that momentum in commodity futures, both total return and idiosyncratic, is entirely driven by long-only portfolios. None of the short-only momentum strategies is statistically significant or positive. As a result a long-short momen-

tum is an inferior strategy with respect to robustness and returns relative to long-only momentum. Notably, idiosyncratic momentum materially outperforms total return momentum in a long-short and long-only implementation on absolute and risk-adjusted basis. Idiosyncratic return momentum yields an attractive Sharpe ratio of 0.65 and 0.63 in a long-short and long-only implementation. This fares favourably to total return momentum which yields a Sharpe of 0.36 and 0.55 in a long-short and long-only implementations respectively and even more so to a passive investing in S&P GSCI which yields a Sharpe of just around 0.

The two key findings in this paper, namely on performance of long-only side of momentum and superior performance of idiosyncratic momentum, reconcile well with the theoretical foundations in the commodity markets literature and with earlier empirical research. The empirical evidence in this paper on the long side of a momentum strategy corroborates the research of Chaves and Visvanathan (2016). Specifically, the authors argue that momentum strategies in futures markets perform well because they have high positive basis. Positive basis means that spot price is higher than a futures price, i.e. backwardated term structure. For the basis of the overall momentum portfolio to be positive it implies that the long-only portfolios have to dominate the return. Positive basis is directly linked to the theory of normal backwardation which states that long-only position in commodity futures provides a positive risk premium.

The evidence on idiosyncratic momentum being more profitable than total return momentum in commodity futures is consistent with the extant literature on time-varying momentum performance. Further, it reconciles well with the research of Gutierez and Prinsky (2007) on an agency-based rational explanation of idiosyncratic and total returns momentum. The authors argue that institutions play a role in generating two types of momentum returns yet the underreaction to idiosyncratic returns momentum is more pronounced and longer-lasting compared to total returns momentum.

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